

KMK | Keating, Muething & Klekamp PLL
ATTORNEYS AT LAW

BRIAN M. BABB
DIRECT DIAL: (513) 579-6963
FACSIMILE: (513) 579-6457
E-MAIL: BBABB@KMKLAW.COM

March 17, 2004

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AIR ENFORCEMENT BRANCH,
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VIA FEDERAL EXPRESS

TO: DISTRIBUTION LIST

Re: DOJ No. 90-11-2-06089, U.S. v. Buckeye Egg Farm, L.P., et al.,
United States District Court, Northern District of Ohio, Western Division,
Civil Action No. 3:03CV7681

Dear Ladies and Gentlemen:

As required in the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., enclosed is Ohio Fresh Eggs, LLC's Certification for the Proposed PM Emissions Control Design and Implementation Plan and the Proposed Ammonia Emissions Control Design and Implementation Plan for Ohio Fresh Eggs, LLC's facilities at Croton, Mt. Victory, and Marseilles, Ohio. This Certification was inadvertently omitted when these Proposed Plans were sent to your attention on March 15, 2004.

Very truly yours,

KEATING, MUETHING & KLEKAMP, P.L.L.

By: Brian M. Babb

Brian M. Babb

Enclosure

cc: Mr. Donald C. Hershey

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United States Environmental Protection Agency
Mail Code 2241A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

(Sent Via Regular U.S. Mail)

Mr. Christopher Jones, Director
Ohio Environmental Protection Agency
Lazarus Government Center
122 South Front Street
Columbus, Ohio 53215

(Sent Via Regular U.S. Mail)

Mr. Fred Dailey, Director
State of Ohio Department of Agriculture
8995 East Main Street
Reynoldsburg, Ohio 43068

CERTIFICATION

I certify under penalty of law that this document and any attachments to it were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing and willful submission of a materially false statement.


OHIO FRESH EGGS, LLC


Donald C. Hershey, Manager

CERTIFICATION

I certify under penalty of law that this document and any attachments to it were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing and willful submission of a materially false statement.

OHIO FRESH EGGS, LLC


Donald C. Hershey, Manager

From: Origin ID: (513)579-6963
Brian M. Babb
Keating, Muehling & Klekamp, P.L.L.
1400 Provident Tower
One East Fourth Street
Cincinnati, OH 45202



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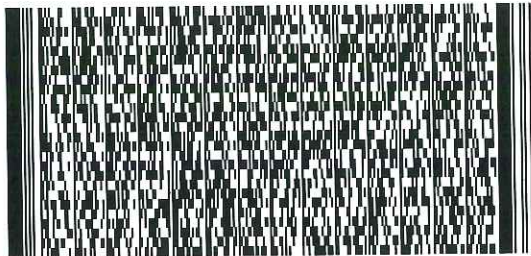
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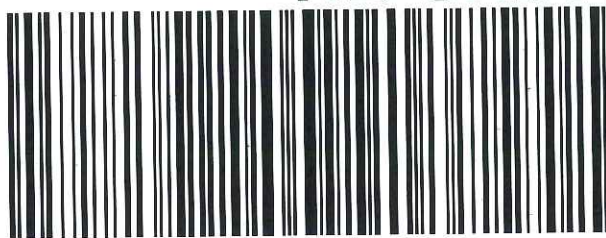
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PROPOSED

Particulate Matter Emissions Control Design and Implementation Plan

for

**Ohio Fresh Eggs, LLC's
Croton, Marseilles, And Mt. Victory, Ohio Facilities**

March 2004

Submitted by:

Ohio Fresh Eggs, LLC
11212 Croton Road
Croton, Ohio 43013
740/893-7200 (telephone)
740/893-7204 (fax)

Ohio Fresh Eggs, LLC

March 15, 2004

RECEIVED

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AIR ENFORCEMENT BRANCH,
U.S. EPA, REGION 5

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Re: DOJ No. 90-11-2-06089, U.S. v. Buckeye Egg Farm, L.P., et al.,
United States District Court, Northern District of Ohio, Western Division,
Civil Action No. 3:03CV7681

Dear Ladies and Gentlemen:

As required in the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., Ohio Fresh Eggs, LLC is submitting a Proposed PM Control Design and Implementation Plan and a Proposed Ammonia Emissions Control Design and Implementation Plan for its Ohio facilities at Croton, Mt. Victory, and Marseilles.

Should you have any questions or need additional information, please contact me.

Very truly yours,

OHIO FRESH EGGS, LLC

By: Donald C. Hershey/bch
Donald C. Hershey

Enclosures

March 15, 2004
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Ohio Environmental Protection Agency
Lazarus Government Center
122 South Front Street
Columbus, Ohio 53215

Mr. Fred Dailey, Director
State of Ohio Department of Agriculture
8995 East Main Street
Reynoldsburg, Ohio 43068

PROPOSED

**Ammonia Emissions Control Design
and Implementation Plan**

for

**Ohio Fresh Eggs, LLC's
Croton, Marseilles, and Mt. Victory, Ohio Facilities**

March 2004

Submitted by:

Ohio Fresh Eggs, LLC
11212 Croton Road
Croton, Ohio 43013
740/893-7200 (telephone)
740/893-7204 (fax)

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Exhibit 2 – Eco-Cure Material Data Safety Sheet

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SECTION I.

INTRODUCTION

Ohio Fresh Eggs, LLC recently acquired commercial egg-laying facilities from Buckeye Egg Farm, L.P. that are located in Croton, Licking County, Ohio ("Croton Facilities"), Harpster, Wyandot County, Ohio ("Marseilles Facilities"), LaRue, Hardin County, Ohio ("Mt. Victory Facilities"), which Facilities are subject to the requirements of the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., United States District Court, Northern District of Ohio, Western Division, Civil Action No. 3:03CV7681. Attachment A of the Consent Decree requires that certain emission controls be installed at these Facilities if, based on testing, such controls are determined to be effective at reducing particulate matter and ammonia emissions from these Facilities. A copy of the Consent Decree, and the associated Attachment A and Exhibits 1-3 are attached for reference as Exhibit 1.

One of the emissions to be addressed under Attachment A of this Consent Decree is the reduction of ammonia (NH_3) generated from the deep-pit layer barns at these Facilities. The layer barns at the Croton Facilities are under a defined schedule to be converted from "deep-pit" manure layer barns to barns with "belt battery" manure handling systems. The belt battery layer barns emit lower concentrations of ammonia than the deep-pit layer barns since there is less manure in these types of barns and the manure has less moisture. There are no plans, nor requirements, to convert the deep-pit layer barns at the Mt. Victory and Marseilles Facilities to belt battery manure management systems. Ohio Fresh Eggs proposes to test the effectiveness of a manure enzyme additive to reduce ammonia emissions from the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

This Proposed Ammonia Emissions Control Design and Implementation Plan sets forth in detail how Ohio Fresh Eggs intends to test and implement the use of an enzyme additive to reduce ammonia emissions from the manure in the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

SECTION II.

BACKGROUND

Generally, depending on the barn size, each deep-pit layer barn at the Croton, Mt. Victory and Marseilles Facilities, when at full capacity, houses either 68,885 or 97,627, 163,859, or 166,780 layer chickens, respectively. The layers excrete manure, which is accumulated in concrete pits beneath the layer cages in the deep-pit layer barns. The manure in the pits within the deep-pit layer barns is removed semi-annually, or during a change over in layers. In contrast, the belt battery layer barns each house approximately 102,098 or 140,000 birds, depending on the barn size and configuration, and manure is removed via covered conveyor belts on a daily basis for storage in separate manure storage buildings. Forced air is directed on the manure conveyor belts to help reduce the moisture content of the manure prior to storage in the manure storage buildings, which are emptied at least annually. The number of layers in the houses will change as a result of the UEP Guidelines.

SECTION III.

OVERVIEW

Attachment A to the Consent Decree requires the submission of a Proposed Ammonia Emissions Control Design and Implementation Plan to the United States Environmental

Protection Agency for review and approval by March 15, 2004. Ohio Fresh Eggs intends to test the effectiveness of a commercially available enzyme additive to reduce ammonia emissions by 50% or more in its deep-pit layer barns. Initially, the effectiveness of the enzyme additive will be tested in a bench-scale study. If the test results show the additive is effective at reducing ammonia emissions from the layer barns by 50% or more, Ohio Fresh Eggs will test the effectiveness of the enzyme additive, on a trial basis, in one fully housed, deep-pit layer barn at the Mt. Victory Facilities. If test results demonstrate that the enzyme additive reduces ammonia levels by 50% or more, the enzyme additive will be used on an ongoing basis in all deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities in accordance with the requirements of Attachment A. Attachment A to the Consent Decree also requires each layer barn at the Croton Facilities that is not converted to belt battery manure handling systems by December 31, 2004, to be subject to the ammonia testing and control requirements until such barns are converted to belt battery manure handling systems. Attached Figures Nos. 2 and 4 summarize the ammonia emission control requirements under Attachment A of the Consent Decree.

SECTION IV. AMMONIA CONTROLS

A. Product or System Design

1. *Enzyme Additive Product or System*

Ohio Fresh Eggs intends to use the Eco-Cure Enzyme Product, which is an enzyme activator, to reduce ammonia emissions from the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities. Eco-Cure is expected to substantially reduce ammonia emissions from the deep-pit layer barns. The manufacturer of this enzyme activator, Eco-Cure, Inc., claims that this product is highly effective in reducing ammonia emissions.

(a) Description of Product

Eco-Cure Enzyme Product is an organic enzyme activator that acts to immobilize ammonia (NH₃) to organic nitrogen (N). This enzyme activator is manufactured by Eco-Cure, Inc. The Material Safety Data Sheet for the Eco-Cure Enzyme Product is attached as Exhibit 2. The enzyme activator works by encouraging aerobic bacterial growth (as opposed to anerobic bacterial activity which promotes the production of ammonia) that consumes ammonia and other organic constituents in the manure.

(b) Explanation of Product Application

Eco-Cure is sold in solid form in 5 gallon containers that each weigh 22 pounds. One pound of the Eco-Cure concentrate is mixed with 32 gallons of dechlorinated water, or water with low chlorine levels. Eco-Cure specifies that the Enzyme Product is to be applied weekly. A copy of the manufacturer's instructions for the use of Eco-Cure is attached as Exhibit 3.

Subject to successful bench scale test results, within 60 days of EPA approval, Ohio Fresh Eggs intends to apply Eco-Cure manually, through the use of portable sprayers, in one (1) deep-pit layer barn at the Mt. Victory Facilities for a period of six (6) months to coincide with the Silsoe Secondary Test Method that will be performed at that barn and a separate control barn, from August 1, 2004 to January 31, 2005. Should the Secondary Test Method results confirm

that use of the Eco-Cure reduces ammonia emissions in the deep-pit layer barns by 50% or more, within 60 days of EPA approval, the use of Eco-Cure will be implemented at all deep-pit layer barns in accordance with the requirements of Attachment A of the Consent Decree. In the event the Eco-Cure product is effective at reducing ammonia emissions, Ohio Fresh Eggs would likely evaluate the feasibility of installing and operating a fixed, automatic sprayer system to apply the Eco-Cure in deep-pit layer barns in lieu of the use of the portable sprayers. Written procedures and training will be provided to the employees that mix and apply the Eco-Cure product to ensure consistency in the concentration of Eco-Cure that is applied in the layer barns.

(c) Summary of Product Costs

The cost of Eco-Cure is \$60 per pound or \$1,320, plus shipping, per 5 gallon container. The estimated costs to use Eco-Cure in a deep-pit layer barn is \$33 per week or \$1,700 per year. The estimated annual cost for the equipment to apply the Eco-Cure is \$500. The estimated annual labor cost to apply Eco-Cure is \$1,500.

The manufacturer claims that the use of Eco-Cure will reduce pesticide use since the treated manure is a less attractive medium for flies. The estimated cost savings associated with the use of Eco-Cure, due to the potential reduced use of pesticides, is unknown. Because Ohio Fresh Eggs very recently acquired ownership of the Facilities, it has not had sufficient time to track pesticide use or costs at these Facilities and the estimated pesticide cost savings may be speculative.

(d) Description of Expected Emissions Reduction

Only very limited, mostly anecdotal, information is available from the manufacturer on the effectiveness of Eco-Cure's enzyme activator in reducing ammonia emissions. The information is attached for reference as Exhibit 4. No analytical data from the manufacturer appears to be available which shows the enzyme activator either will or will not reduce ammonia emissions by 50% or more. However, limited analytical information concerning the use of the enzyme activator does indicate that Eco-Cure may be effective in reducing ammonia odors and concentration. Copies of this information is attached as Exhibit 5. The manufacturer claims that 85 egg growers in the United States use Eco-Cure to reduce ammonia emissions, and that Eco-Cure users include Rose Acre Farms, Sparboe, ISE Newberry Inc., Valley Fresh Farms, and Tyson Foods. The manufacturer did not have or was not willing to provide any additional documents about the effectiveness of the use of Eco-Cure at these commercial facilities.

(e) Contract, Purchase and Implementation Schedule

The cost of the Eco-Cure enzyme activator is \$60 per pound and is only available through Eco-Cure, Inc. According to the manufacturer, Eco-Cure is readily available for commercial use, subject to purchase order approval and shipping time. Ohio Fresh Eggs will order a sufficient quantity of Eco-Cure for the bench scale study upon approval of the Ammonia Control Plan. Eco-Cure is expected to be delivered to Ohio Fresh Eggs within two (2) weeks of ordering. Sprayer equipment to apply the enzyme additive is readily available and will be purchased by Ohio Fresh Eggs. Ohio Fresh Eggs expects that it may need 60 to 90 days to adjust the use of Eco-Cure to maximize its effectiveness.

(f) Reporting and Recordkeeping

As required by Attachment A of the Consent Decree, Ohio Fresh Eggs will timely submit the Eco-Cure test results from the bench scale and Secondary Test Method to EPA for review and approval. During the Secondary Test Method period, Ohio Fresh Eggs will maintain an Enzyme Activator Log to record the frequency and quantity of application of the enzyme activator. A sample Enzyme Activator Application Log is attached as Exhibit 6. These Logs will be reviewed on a weekly basis to ensure the enzyme additive is timely and properly applied in the deep-pit layer barns. These Logs will be summarized in the quarterly reports that are submitted to EPA. The quarterly reports will summarize the status of the Eco-Cure testing and implementation. Should the Secondary Test Method results confirm the effectiveness of the enzyme activator, and EPA approve facility-wide application, the Enzyme Activator Application Log will be maintained to monitor enzyme activator usage in the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

(g) Description of Expected Emissions or Wastes

According to Eco-Cure's manufacturer, the use of the enzyme activator substantially reduces the emissions of ammonia and hydrogen sulfide from the manure, and the only anticipated by-products or wastes generated from the use of Eco-Cure are carbon dioxide and water. It is possible that since the enzyme activator accelerates microbiological activity, which reduces the organic matter in the manure, that the use of Eco-Cure could concentrate certain nutrients in the remaining manure, such as nitrogen. Ohio Fresh Eggs will test the nutrient content in the manure prior to disposal or sale to determine if the Manure Management Plans for the Facilities need to be revised.

B. Testing

Ohio Fresh Eggs intends to test the effectiveness of the Eco-Cure enzyme activator in accordance with the requirements of Attachment A of the Consent Decree. The following testing protocols are intended to be used.

1. Bench Scale Test Protocol

Preliminary Test of Enzyme

Bench scale testing of the enzyme activator product will be conducted by Purdue University consistent with the Quality Assurance Project Plan as set forth in Exhibit 2 to Attachment A of the Consent Decree and within the time frames set forth in Attachment A to the Consent Decree.

Currently, the plans are to test the enzyme activator product using the Purdue Manure Reaction Laboratory. Laying hen manure collected from the Ohio Fresh Eggs' facilities will be added to eight (8) vertical cylindrical reactors at regular intervals during a 45-day trial. The product will be applied per the manufacturer's instructions to four randomly selected reactors. The reactors will be held at 20°C and ventilated with 7 L/min (0.25 cfm) of fresh air. Ten inches of manure will be added to each column on day zero. One-half inch of additional manure (1.4 L) will be added to each column daily. The columns will be loaded to a maximum level of thirty-

two (32) inches throughout the test to allow a minimum of sixteen (16) inches of headspace. Ammonia and carbon dioxide emission from each reactor will be measured automatically at least six times daily. Initial and final manure characteristics will be analyzed. Test results will be submitted as required under Attachment A to the Consent Decree.

2. *Secondary Test Method Protocol*

Secondary Method tests of ammonia emissions will be conducted by Purdue University consistent with the Quality Assurance Project Plan as set forth in Exhibit 2 to Attachment A of the Consent Decree. Subject to EPA's approval of the bench scale tests on the effectiveness of the enzyme activator, for purposes of preparing for the Secondary Test Method, Ohio Fresh Eggs intends to apply the enzyme additive, in accordance with the requirements in Attachment A of the Consent Decree, in layer barn No. 1, at the Mt. Victory Facilities, which is a deep-pit barn. Layer barn No. 2 at the Mt. Victory Facilities, which is a deep-pit barn, will be the control barn during the Secondary Method Test. No enzyme activator product will be used in this barn during the Secondary Method Test period. Both test barns at the Mt. Victory Facilities are of comparable age, design, and chicken population. Ohio Fresh Eggs intends to commence application of the enzyme activator in one of the Mt. Victory test barns prior to commencement of the Secondary Method Test in order to ensure optimal performance of the enzyme activator during the test.

The enzyme activator will be manually applied in accordance with the manufacturer's instructions and guidelines, on a weekly basis, in the barn where the effectiveness of the enzyme activator is being tested throughout the 6-month test period. The weekly dosage of approximately three (3) ounces will be applied in about eight (8) gallons of water.

3. *Test Parameters*

Ammonia Concentration

Ammonia will be measured in real time with a chemiluminescence (CL)-based NH_3 analyzer (Model 17C, Thermal Environmental Instruments (TEI), Franklin, MA), which is a combination NH_3 converter and a NO_x analyzer that is typically used for ambient monitoring but has a range capable of measuring typical concentrations inside animal buildings. Sample air is drawn at a flow rate of 0.6 L/min from the converter into the NH_3 analyzer through a particulate filter, a glass capillary, and a solenoid valve. The solenoid valve routes the sample either directly into the reaction chamber (NO mode) or through the converter and the reaction chamber (NO_x mode). NH_3 concentration is calculated based on the difference between these readings. The 0 to 90% response time is 120 s with 10 s averaging. Besides having an appropriate range for source measurements, the CL method is known for its stability, reliability, and high precision (0.5% of full scale). The full scale will be 1-100 ppm, depending on maximum expected levels. If NO and NO_2 measurements are negligible, the analyzer is operated in the total N mode to decrease response time and costs of NH_3 scrubbers (Heber et al., 2002a).

A photoacoustic infrared (PIR) ammonia monitor (1,000 ppm) (Mine Safety Appliances, Pittsburgh, PA) will be collocated with the CL method. Each ammonia analyzer will be

calibrated at least two times per week using standard gases. The standard gases will first be checked using an FTIR gas spectrometer at Purdue University to verify their accuracy.

Carbon Dioxide Concentration

Concentrations of CO₂ will be measured using a 0-5,000-ppm photoacoustic infrared-based CO₂ analyzer. The sensor utilizes dual frequency photoacoustic infrared absorption and is corrected for water vapor content. The guaranteed precision of this analyzer is ± 100 ppm of full scale and the sample flow rate is 1.0 L/min. To prevent drifts during calibration with dry calibration gases, the certified span CO₂ gases will be prepared with 2.5% CH₄.

Environmental Conditions

Ambient temperature will be logged for the purpose of calculating the mean daily temperature for analysis of ambient temperature effects on emission rates. At least eight (8) thermocouples will be used to sense temperatures in each building. The sensors will be calibrated prior to, and following each monitoring period using a constant-temperature bath. An electronic RH/temp transmitter (Model HMW61, Vaisala, Woburn, MA) housed in a NEMA 4 enclosure will monitor temperature and relative humidity at a representative exhaust location in each building. This RH/temp transmitter uses a HUMICAP sensor unit with $\pm 2\%$ accuracy between 0 and 90% RH and $\pm 3\%$ accuracy between 90 and 100% RH. Building static pressure will be monitored continuously at the center of the buildings across each sidewall using differential pressure transmitters (Model 267, Setra, Boxborough, MA) with an accuracy of $\pm 0.25\%$. Zero calibrations of the pressure sensors will be conducted by shunting the sensor inputs. Standard static pressure taps will be constructed to minimize effects of air movement. Wind speed and direction will be measured with a cup anemometer. The weather station will also measure solar radiation and temperature and humidity.

Ventilation Rate Measurements

One of the most difficult and yet most important aspects of determining emission rates in livestock and poultry facilities is the determination of ventilation rates. Building ventilation rates are a function of animal type, number and weight, and outdoor air temperature and can vary considerably throughout the day and seasons.

Actual fan performances are typically 5 to 20% less than published fan curves due to dust buildup, belt wear, and shutter degradation and emissions are overestimated unless fan deratings are known. Therefore, one fan of each model among the three buildings will be tested dirty in the fan test facility at the University of Illinois to determine the actual (derated) fan performance curves, to calibrate a FANS (fan assessment numeration system) analyzer ($< 2\%$ accuracy), and to calibrate small vane anemometers (SVAs). The calibrated FANS will then be used to spot measure airflow of all other fans in the barns. In this way, the FANS will serve as a field-based reference measurement technique. Additionally, an SVA will be installed at representative locations in ten fans per building to monitor airflow rate continuously. The SVAs will be calibrated in the field with the FANS analyzer. The building ventilation rates will be determined by monitoring the operation of all fans (using dry contacts on relays or vibration sensors) and the building static pressure and determining the fan airflow from the actual fan performance curves.

Manure Analysis

The manure in each layer barn will be sampled monthly to determine pH and moisture content, which are the two major factors affecting ammonia emissions. Twenty-five (25) surface samples will be collected from randomly selected locations in each building. Each sample will be put on ice and delivered to a manure analysis laboratory for analysis of pH and moisture content.

Quality Assurance/Quality Control

The project will have in place documented quality assurance/quality control (QA/QC) processes before data is collected. The QA/QC procedures will be based on EPA guidelines and implemented by each laboratory and during each sampling and measurement activity. The following is an outline about the QA/QC procedures:

General - Each laboratory will follow all protocols for this project and will utilize EPA approved standards, whenever they are available. Data will be analyzed using custom software (CAPECAB "Computations of Air Pollutant Emissions from Confined Animal Buildings) developed by the RSLs Group of Companies (Calgary, Alberta). Quality assurance and quality control at each mobile laboratory will include the use of properly maintained and reliable instrumentation, ready supply of spare parts, approved analytical methodologies and standard operation procedures, external validation of data, well-trained analysts, field blanks, electrical backups, audits, and documentation. Logs will be maintained for each instrument. A detailed QA/QC plan, based on EPA guidelines, will be provided upon request.

Sampling - Chain of custody documentation will be used for samples, e.g. PM, etc., that are collected and taken off-site. Wetted materials used for continuous gas sampling will be Teflon, stainless steel or glass. Gas airflows will be calibrated using precision airflow calibrators. Logged data files in the PC for the previous day will be checked the next business day to find and correct problems.

Calibrations - Certifications for calibration gases will include two NIST-traceable analyses at least one week apart. Calibrations of gas analyzers will be conducted at least twice a week using a programmable gas diluter. Certified calibration gases will consist of 9,000-ppm CO₂ in N₂, zero air, 180-ppm NO in N₂, and 180-ppm NH₃ in air.

Analytical Methods - Approved analytical methods will be used in all experiments. All analytical equipment will be properly maintained, tested regularly to ensure they are functioning properly, external validation of data will be done, and trained analysts will run all equipment. On-line results of all the continuous measurement variables will be displayed on a PC screen. Lab personnel will check the on-line display at least twice daily by either remote or on-site access. All electronic instrumentation will be protected by uninterruptible power systems.

Data Reduction and Reporting - On-screen data will be viewed on-line and downloaded regularly. Initial processing of measurement data will be done each week using CAPECAB. In addition to computer storage, raw tables or graphs will be printed out and stored in a loose-leaf notebook in the laboratory. Final data processing will occur following each test.

Gas calibration procedures will be maintained by redundant verification of calibration gases, frequent calibration checks, increased number of span concentrations during calibration, and by use of programmable gas dilution. Gas sampling lines in cold areas will also be heated to prevent condensation.

Data Analysis, Assessment, and Interpretation

The layer barn emission rates will be determined by multiplying concentration data (mass/volume) by barn ventilation rate (volume/time). Since the emission data will span roughly six months, they will reveal minimums and maximums as well as trends that may be related to season, animal age, climate, and management.

As data is collected in real-time by the data acquisition computer, it will be converted to binary format and transferred automatically to a server at Purdue University. The software program CAPECAB allows immediate access to the data to visualize and inspect the data. CAPECAB also facilitates data validation via interactive and automatic flagging. It performs interpolations between concentration measurements, which, coupled with continuous airflow measurements, allows the creation of an emission value every minute. From this 60-s database, the program creates averages over user-specified intervals (5-min, 60-min, 24-h, weekly, etc.). Thus, the following day, CAPECAB can create a report of hourly averages for the previous day. By Friday of each week, data will be summarized for the previous week.

C. Implementation

Subject to EPA's approval of the test results from the bench scale study, and subsequently, if approved, the test results from the Secondary Test Method, Ohio Fresh Eggs will commence the use of the enzyme activator product, in accordance with the timetable and terms set forth in Attachment A of the Consent Decree, in all operational deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

SECTION V. CONCLUSION

Ohio Fresh Eggs proposes to test the effectiveness of the use of a commercially available enzyme activator, Eco-Cure, to reduce ammonia emissions from its deep-pit layer barns at its Croton, Mt. Victory and Marseilles Facilities. Should bench scale tests and Secondary Test Method confirm that the use of the enzyme activator is effective in reducing ammonia emission by 50% or more, the enzyme activator will be used on an ongoing basis at all deep-pit layer barns in accordance with the requirements of Attachment A of the Consent Decree.



March 15, 2004

VIA FEDERAL EXPRESS

TO: DISTRIBUTION LIST

Re: DOJ No. 90-11-2-06089, U.S. v. Buckeye Egg Farm, L.P., et al.,
United States District Court, Northern District of Ohio, Western Division,
Civil Action No. 3:03CV7681

Dear Ladies and Gentlemen:

As required in the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., Ohio Fresh Eggs, LLC is submitting a Proposed PM Control Design and Implementation Plan and a Proposed Ammonia Emissions Control Design and Implementation Plan for its Ohio facilities at Croton, Mt. Victory, and Marseilles.

Should you have any questions or need additional information, please contact me.

Very truly yours,

OHIO FRESH EGGS, LLC

By: Donald Hershey / by kb
Donald C. Hershey

Enclosures

March 15, 2004

Page 2

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Mr. Fred Dailey, Director
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8995 East Main Street
Reynoldsburg, Ohio 43068

PROPOSED

**Particulate Matter Emissions Control Design
and Implementation Plan**

for

**Ohio Fresh Eggs, LLC's
Croton, Marseilles, and Mt. Victory, Ohio Facilities**

March 2004

Submitted by:

Ohio Fresh Eggs, LLC
11212 Croton Road
Croton, Ohio 43013
740/893-7200 (telephone)
740/893-7204 (fax)

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SECTION I. INTRODUCTION

Ohio Fresh Eggs, LLC recently acquired commercial egg-laying facilities from Buckeye Egg Farm, L.P. that are located in Croton, Licking County, Ohio ("Croton Facilities"), Harpster, Wyandot County, Ohio ("Marseilles Facilities"), LaRue, Hardin County, Ohio ("Mt. Victory Facilities"), which Facilities are subject to the requirements of the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., United States District Court, Northern District of Ohio, Western Division, Civil Action No. 3:03CV7681. Attachment A of the Consent Decree requires that certain emission controls be installed at these Facilities if, based on testing, such controls are determined to be effective at reducing particulate matter and ammonia emissions from these Facilities. A copy of the Consent Decree, and the associated Attachment A and Exhibits 1-3, are attached for reference as Exhibit 1.

One of the emissions to be addressed under Attachment A of this Consent Decree is that of particulate matter ("PM"), which is generated by the layer barns at these Facilities. The layer barns at the Croton Facilities are under a defined schedule to be converted from "deep-pit" manure layer barns to barns with "belt battery" manure handling systems. The belt battery layer barns emit lower concentrations of PM than the deep-pit layer barns since the manure is continuously removed to a confined storage area with no ventilation discharge, thus eliminating a particulate generation point in these types of barns. There are no plans, nor requirements, to convert the deep-pit layer barns at the Mt. Victory and Marseilles Facilities to belt battery manure management systems. Ohio Fresh Eggs proposes to test the effectiveness of a Particulate Impaction System, and other emissions controls, to reduce PM emissions from the layer barns at the Croton, Mt. Victory and Marseilles Facilities.

This Proposed Particulate Matter Emissions Control Design and Implementation Plan sets forth in detail how Ohio Fresh Eggs intends to test and verify control efficiency of a particulate impaction media, referred to as the "Particulate Impaction System" or "curtains", as the primary control measure. In addition, other emission process control measures such as feedstock and bird type will be modified, to help reduce PM emissions from the layer barns at the Croton, Mt. Victory and Marseilles Facilities. Once the emission control measures have been proven effective then they will be implemented at these Facilities.

SECTION II. BACKGROUND

Generally, depending on the barn size, each deep-pit layer barn at the Croton, Mt. Victory and Marseilles Facilities, when at full capacity, houses either 68,885 or 97,627, 163,859, or 163,859 or 166,780 layer chickens, respectively. The primary sources of particulate matter emissions from the layer barns are believed to be the chickens, manure piles, feed fines and feathers from the layers. Ventilation fans are used in the barns to maintain proper ventilation rate and control temperature, and ostensibly facilitates the emission of particulate matter from the layer barns. The layers excrete manure, which is accumulated on concrete floors beneath the layer cages in the deep-pit layer barns. The manure collected in the pits in this type of layer barn is removed semi-annually, or during a change over in layers. In contrast, the belt battery layer barns each house approximately 102,098 or 140,000 birds, and manure is removed via covered conveyor belts on a daily basis for storage in separate manure storage buildings. Forced air is

directed on the manure conveyer belts to help reduce the moisture content of the manure prior to storage in the manure storage buildings, which are emptied at least annually.

SECTION III. OVERVIEW

Attachment A to the Consent Decree requires the submission of a Proposed Particulate Matter Emissions Control Design and Implementation Plan to the United States Environmental Protection Agency for review and approval by March 15, 2004. Ohio Fresh Eggs intends to test the effectiveness of an innovative, Particulate Impaction System, which was successfully tested on a poultry operation in Germany, and other emission control measures, to reduce PM emissions from the deep-pit layer barns at the Mt. Victory and Marseilles Facilities.

Initially, the control efficiency of the Particulate Impaction System will be evaluated during a 7-day test on one (1) fan at a deep-pit layer barn at the Mt. Victory Facilities. If the test results indicate the Particulate Impaction System is effectively controlling PM emissions from the layer barns, Ohio Fresh Eggs will install the Particulate Impaction System on a trial basis, in one fully housed, deep-pit layer barn at the Mt. Victory Facilities and evaluate its performance and collect emission data to verify yearly emission rates over a six-month period using the Silsoe Secondary Test Method. In addition, the effect of process PM control measures such as the use of a new variety of chickens and feed will be evaluated during the EPA Method 5 and Silsoe Secondary Method testing in a belt battery barn at the Croton Facilities. If results of these tests demonstrate that the Particulate Impaction System, and other emission controls, adequately reduce PM levels, the Particulate Impaction System, and other emission controls, will be implemented in the layer barns at the Croton, Mt. Victory and Marseilles Facilities in accordance with the requirements of Attachment A. Attachment A to the Consent Decree also requires each deep-pit layer barn at the Croton Facilities, which is not converted to belt battery manure handling systems by December 31, 2005, to be retrofitted with the approved Particulate Impaction System, and other emission controls, until such barns are converted to belt battery manure handling systems. Attached Figures Nos. 1 and 3 summarize the PM emission control requirements under Attachment A of the Consent Decree.

SECTION IV. PARTICULATE MATTER CONTROLS

A. Product or System Design

Ohio Fresh Eggs proposes to use as the primary particulate control the Particulate Impaction System. The impaction system works on the principal of inertial separation, particles in the gas stream are removed by imparting a centrifugal force on the particles, this force is induced by pulling the particulate laden air through a series of spatially designed entrance holes on one side of the media at a sufficient velocity to induce particle impaction on the collection sector of the device before the gas then exits at spatially designed exhaust ports. This control was selected based on its collection efficiency capabilities for small particles, initial cost and minimal operational and maintenance costs, and the physico-chemical characteristics (i.e., size, shape, density, and agglomeration tendencies) of the site particulate matter. The system was successfully tested in Germany where test results indicated total TSP reductions of about 74% and PM10 reductions of about 65-70%. In addition, secondary process control measures such as a new variety of chicken and feed, an enzyme activator product, and operational controls on

ventilation fans, to reduce PM emissions from the layer barns at the Croton, Mt. Victory and Marseilles Facilities, as required under Attachment A of the Consent Decree. The Particulate Impaction System, and other emission control measures, are expected to substantially reduce PM emissions from the deep-pit layer barns. The manufacturer of the Particulate Impaction System, Big Dutchman, believes that this System will be effective in reducing PM emissions. The enzyme activator product is being tested to evaluate its effectiveness in reducing ammonia emissions, but a secondary benefit is expected to be a reduction in PM emissions.

(a) Description of System/Product

(i) Particulate Impaction System. The Particulate Impaction System is a physical structure that resembles non-rigid ceiling-to-floor curtain/filter combination curtains, which will be constructed parallel to the manure pit sidewalls and at a proper distance from the discharge fans in the deep-pit layer barns. The collector sections of these curtains reduce PM emissions by removing airborne particulate matter via inertial separation and impaction then the air is exhausted via the ventilation fans from the barns. The Particulate Impaction System will be constructed with a winch system so that the System can be raised or lowered depending on the volume of manure in the manure pits. The use of this winch system is necessary to limit manure contact with the System to prevent damage. The lower portion of the curtain will consist of heavy plastic to prevent air flow through it and will be weighted at the bottom to limit movement of the lower curtain. The upper portion of the curtain will be comprised of a spatially designed perforated cardboard media with 90 degree contours which create sudden changes in airflow direction and force particles to impact on the media. When cleaned by vibration the particles drop out into a collection tray inside at the bottom of the impaction system. This System is manufactured by Big Dutchman. The general design of the Particulate Impaction System is attached as Exhibit 2.

(ii) New Layer Variety. Ohio Fresh Eggs proposes to introduce a new variety of layer chicken into the layer barns that hopefully will reduce PM emissions. The chickens are known as "Hyline W-36s," and are less active than the current variety. Recent research at Purdue University has shown that PM emissions are significantly influenced by bird activity. PM emissions at night when the layers are sleeping are 40 to 50% of daytime emissions.

(iii) New Feed. Ohio Fresh proposes to introduce a new type of feed into the layer barns that it believes will generate less dust. Research at Kansas State University has shown that diets with greater concentrations of oils, either as an amendment or through the use of high oil corn, will reduce PM emissions. The typical composition of the new feed will include 3% to 4% fat to reduce feed fines.

(iv) Enzyme Activator. Ohio Fresh Eggs proposes to use Eco-Cure Enzyme Product in the layer barns to reduce ammonia emissions, but it is expected that the use of this enzyme activator will also reduce PM emissions.

When applied the formulation causes a crust to form on the outside surface of the manure pile. This crust acts to agglomerate the particles thus reducing their ability to be entrained by the airflow movement over the pile. The use of Eco-Cure is described in the Ammonia Control Plan.

(v) Ventilation Fan Operation Control. Ohio Fresh Eggs proposes to purchase and install computer software that will monitor ventilation fan operation in one of the layer barns for six months. Ohio Fresh Eggs will analyze this data to determine the number of operating fans, duration of fan operation to calculate actual yearly PM emissions from the barns.

(b) Explanation of Particulate Impaction System Use

Subject to completion of the 7-day test results of the effectiveness of the Particulate Impaction System in reducing PM emissions, within 60 days of EPA approval of the test results, Ohio Fresh Eggs intends to install and operate the Particulate Impaction System in one (1) deep-pit layer barn at the Mt. Victory Facilities for a period of six (6) months to coincide with the Silsoe Secondary Test Method that will be performed at that barn, and a separate control barn at Mt. Victory, from August 1, 2004 to January 31, 2005. Installation of the Particulate Impaction System will commence within forty-five (45) days of EPA's approval, but will be completed before August 1, 2004. Should the Secondary Method Test results confirm that use of the Particulate Impaction System reduces PM emissions in the deep-pit layer barns to satisfactory levels, within 60 days of EPA approval, the installation of the Particulate Impaction System will commence at the deep-pit layer barns in accordance with the requirements of Attachment A of the Consent Decree. Ohio Fresh Eggs will complete installation of the curtains at the Mt. Victory and Marseilles facilities within one (1) year of EPA's approval of the Secondary Method Test results. Installation of the curtains will proceed with diligence throughout the required barns, but installation may be scheduled to coincide with flock changeover or other improvements. Written procedures and training will be provided to the employees that ensure consistency in the operation and maintenance of the Particulate Impaction System in the layer barns.

(c) Summary of Particulate Impaction System Costs

The cost to purchase and install the Particulate Impaction System is estimated at \$22,000 per barn. The estimated annual labor cost to maintain the Particulate Impaction System, in the layer barns at the Croton, Mt. Victory, and Marseilles Facilities is \$1,500 and maintenance of the partition is estimated at \$3,000 per year.

(d) Description of Expected Emissions Reduction

Very limited information is available from the manufacturer on the effectiveness of the Particulate Impaction System in reducing PM emissions. This emission control system is very new and now being tested by the manufacturer. However, limited test data concerning the use of the Particulate Impaction System does indicate that the curtains may be effective in reducing total TSP emissions by 74% and PM 10 fraction by 65 to 70%. Copies of this information is attached as Exhibit 3. Because of the recent development of the impaction media, the

manufacturer did not have or was not willing to provide any additional documents about the effectiveness of the use of Particulate Impaction System in reducing PM emissions at commercial egg-laying facilities.

(e) Contract, Purchase and Implementation Schedule

The impaction media is only available through Big Dutchman (P.O. Box 1183, 49630 Vechta, Germany or P.O. Box 1017, Holland, MI 49422-1017). According to Big Dutchman, the impaction media is available for commercial use, subject to purchase order approval and shipping time. Ohio Fresh Eggs will order a sufficient quantity of the impaction media for the PM emission tests upon approval of the PM Control Plan. The impaction media for the 7-day test and full installation in one layer barn has been ordered and is expected to be delivered to Ohio Fresh Eggs within thirty (30) days. Ohio Fresh Eggs expects that it may need thirty (30) days to adjust the Particulate Impaction System to maximize its effectiveness.

(f) Reporting and Recordkeeping

As required by Attachment A of the Consent Decree, Ohio Fresh Eggs will timely submit the 7-day test results, the Method 5 Test results, and the Secondary Test Method results to EPA for review and approval. During the Secondary Test Method period, Ohio Fresh Eggs will maintain an Operation and Maintenance Log to document maintenance, repair, and adjustments to the Particulate Impaction System and other approved emission controls at the Croton, Mt. Victory, and Marseilles Facilities. A sample Operation and Maintenance Log is attached as Exhibit 5. These Logs will be reviewed on a weekly basis to ensure the Particulate Impaction System is properly maintained and operated in the deep-pit layer barns and that the other approved emissions controls are consistently and properly used. These Logs will be summarized in the quarterly reports that are submitted to EPA. The quarterly reports will summarize the status of the PM emission control tests and implementation. Should the Secondary Test Method results confirm the effectiveness of the Particulate Impaction System, and EPA approve facility-wide application, the Log will be maintained to monitor operation of the Particulate Impaction System and other emission controls in the layer barns at the Croton, Mt. Victory and Marseilles Facilities.

(g) Description of Expected Ammonia Emissions or Wastes

According to the manufacturer of the Particulate Impaction System, the use of the Particulate Impaction System should substantially reduce the emission of particulate matter from the deep-pit layer barns. The only anticipated by-products or wastes generated from the use of Particulate Impaction System is dust or particulate matter collected by the Particulate Impaction System. The dust will be periodically deposited onto, incorporated into, and disposed along with the stored manure.

B. PM Testing

Ohio Fresh Eggs intends to test the effectiveness of the Particulate Impaction System, and other approved emission controls, in accordance with the requirements of Attachment A of the Consent Decree. The following testing protocols are intended to be used.

1. *Particulate Impaction System Test Protocol*

Within thirty (30) days of EPA's approval of the PM Plan, Ohio Fresh Eggs will install a Particulate Impaction System at one ventilation fan in layer barn No. 1, which is a deep-pit layer barn. A 7-day test of the Particulate Impaction System at layer barn No. 1 at the Mt. Victory Facilities will be conducted by Purdue University consistent with the Quality Assurance Project Plan, as set forth in Exhibit 2 to Attachment A of the Consent Decree, and within the time frames set forth in Attachment A to the Consent Decree. The Particulate Impaction System will be installed consistent with the manufacturer's instructions and Exhibit 1 to Attachment A of the Consent Decree. Test results will be submitted as required under Attachment A to the Consent Decree.

To measure system removal efficiency of the Particulate Impaction System, a TEOM 1400A with a PM-10 sampling head and microbalance, to measure PM10 fraction and a gravimetric high volume TSP sampler to measure total TSP, will be placed at the inlet and the Particulate Impaction System. The fan will be operated continuously and measurements will be conducted such that any difference between inlet and outlet TSP and PM-10 concentrations can be quantitatively determined to derive the PM control efficiency of the Particulate Impaction System. The sample integration time for the PM-10 analyzer will be thirty (30) minutes, and the integration time for the TSP samplers will be daily, or as determined on-site by filter loading. It is anticipated that the test will be conducted for approximately seven (7) days to assess any variability in control efficiency as the Particulate Impaction System accumulates PM. A temporary shelter will be stationed next to the layer barn to house the TEOM control units and to provide space for the transfer of gravimetric filters to containers for off-site laboratory analysis.

2. *Method 5 Test Protocol*

By May 15, 2004, Ohio Fresh will complete a 5-day, EPA Method 5 Test program consisting of 15 one hour tests, (3 per day at selected activity intervals) of a belt battery layer barn at the Croton Facilities, which barn will house a new variety of layer chickens, known as "W-36's", which are believed to be a calmer layer, and generate less dander and dust, and will be fed a new type of feed that is expected to generate less dust because of its composition and grind. This Method 5 Testing will be conducted by a qualified professional consistent with the Quality Assurance Project Plan, as set forth in Exhibit 2 to Attachment A of the Consent Decree. The testing will be performed in layer barn No. 45, which is a belt battery barn, of similar design, construction, and number of chickens as the previous Method 5 Testing conducted at the Croton Facilities.

A temporary duct (48 inch diameter, 12 feet long) serving as a discharge duct will be installed on a representative exhaust fan to perform Method 5 measurements of total filterable PM emissions from the layer barn. Two sampling ports (located 90 degrees apart on the duct) will be located 96 inches downstream of the fan discharge air flow disturbance and 48 inches upstream of the exhaust to atmosphere. Twenty-four (24) sampling points, 12 along each traverse plane, will be used to conduct a full particulate traverse for each test run.

EPA Method 1, "Sample and Velocity Traverses for Stationary Sources," will be used to select a representative measurement site. EPA Method 2, "Determination of Stack Gas Velocity

and Volumetric Flow Rate" will be used to determine volumetric flow rate. EPA Method 3, "Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight" will be used to determine emission rate correction factors, dry molecular weight, and excess air. EPA Method 4, "Determination of Moisture Content in Stack Gases" will be used to determine stack gas moisture content and will be conducted simultaneously with each particulate measurement run. The initial and final weights of all impingers will be determined gravimetrically. EPA Method 17, "Determination of Particulate Emissions from Stationary Sources" will be used to determine filterable particulate matter. The sample train will consist of a stainless steel nozzle, a glass-fiber filter, probe, and a series of impingers followed by a vacuum pump, dry gas meter, and calibrated orifice. The Method 17 filter media will be sampled at stack temperature. Thermocouples will be used to monitor temperatures of the stack gas and impinger exit gas. All components of the sampling will meet the requirements of EPA QA/QC Guidance Document EPA-600/R-94/038C.

3. *Secondary Test Method Protocol*

(a) Mt. Victory

A Secondary Test Method of PM emissions in a deep-pit layer barn, in which the Particulate Impaction System has been installed, will be conducted by Purdue University consistent with the Quality Assurance Project Plan, as set forth in Exhibit 2 to Attachment A of the Consent Decree. Subject to EPA's approval of the 7-day tests on the effectiveness of the Particulate Impaction System, Ohio Fresh Eggs will install the Particulate Impaction System in one (1) deep-pit layer barn at the Mt. Victory Facility in accordance with the requirements in Attachment A of the Consent Decree. The Particulate Impaction System will be installed in layer barn No. 1, at the Mt. Victory Facilities, which is a deep-pit barn. Layer barn No. 2 at the Mt. Victory Facilities, which is a deep-pit barn, will be the "control" barn during the Secondary Method Test. No enzyme activator or curtain will be used in the "control" barn during the Secondary Test Method period. Both test barns at the Mt. Victory Facilities are of comparable age, design, and chicken population. Ohio Fresh Eggs intends to commence application of the enzyme activator in test barn No. 1 prior to commencement of the Secondary Test Method in order to ensure optimal performance of the enzyme activator during the Test. Installation of the Particulate Impaction System will be installed within forty-five (45) days of EPA approval, but before August 1, 2004.

The Particulate Impaction System will be installed and operated in accordance with the manufacturer's instructions and guidelines in the deep-pit barn where the effectiveness of the enzyme activator is also being tested throughout the 6-month test period.

(b) Croton Facility

Subject to EPA's approval of the Method 5 Test results, Secondary Test Method of PM emissions in a belt battery layer barn in which the new feed and chicken variety are being tested will be conducted by Purdue University consistent with the Quality Assurance Project Plan, as set forth in Exhibit 2 to Attachment A of the Consent Decree. Subject to EPA's approval, for purposes of preparing for the Secondary Test Method, Ohio Fresh Eggs intends to switch to a new variety of layer chickens, known as "W-36s", and a new type of feed prior to the

commencement of the Secondary Test Method in order to best evaluate conditions representative of the use of new birds and feed. The Secondary Test Method will be performed in layer barn No. 45 at the Croton Facilities, which is a belt battery layer barn. This new type of feed and variety of layer will be used throughout the Secondary Test Method period at the Croton test barn. Barn No. 45 is similar to the design of the barn and number of chickens that were tested under the Secondary Method in August and September, 2003.

(c) Test Parameters

Environmental Conditions

Ambient temperature will be logged for the purpose of calculating the mean daily temperature for analysis of ambient temperature effects on emission rates. At least eight (8) thermocouples will be used to sense temperatures in each building. The sensors will be calibrated prior to, and following each monitoring period using a constant-temperature bath. An electronic RH/temp transmitter (Model HMW61, Vaisala, Woburn, MA) housed in a NEMA 4 enclosure will monitor temperature and relative humidity at a representative exhaust location in each building. This RH/temp transmitter uses a HUMICAP sensor unit with $\pm 2\%$ accuracy between 0 and 90% RH and $\pm 3\%$ accuracy between 90 and 100% RH. Building static pressure will be monitored continuously at the center of the buildings across each sidewall using differential pressure transmitters (Model 267, Setra, Boxborough, MA) with an accuracy of $\pm 0.25\%$. Zero calibrations of the pressure sensors will be conducted by shunting the sensor inputs. Standard static pressure taps will be constructed to minimize effects of air movement. Wind speed and direction will be measured with a cup anemometer. The weather station will also measure solar radiation and temperature and humidity.

Ventilation Rate Measurements

One of the most difficult and yet most important aspects of determining emission rates in livestock and poultry facilities is the determination of ventilation rates. Building ventilation rates are a function of animal type, number and weight, and outdoor air temperature and can vary considerably throughout the day and seasons.

Actual fan performances are typically 5 to 20% less than published fan curves due to dust buildup, belt wear, and shutter degradation and emissions are overestimated unless fan deratings are known. Therefore, one fan of each model among the three buildings will be tested dirty in the fan test facility at the University of Illinois to determine the actual (derated) fan performance curves, to calibrate a FANS (fan assessment numeration system) analyzer ($< 2\%$ accuracy), and to calibrate the small vane anemometers (SVAs). The calibrated FANS will then be used to spot measure airflow of all other fans in the barns. In this way, the FANS will serve as a field-based reference measurement technique. Additionally, an SVA will be installed at representative locations in ten fans per building to monitor airflow rate continuously. The SVAs will be calibrated in the field with the FANS analyzer. The building ventilation rates will be determined by monitoring the operation of all fans (using dry contacts on relays or vibration sensors) and the building static pressure and determining the fan airflow from the actual fan performance curves.

Manure Analysis

The layer barns will be sampled monthly to determine moisture content, which is an important factor affecting PM emissions. Twenty-five (25) surface samples will be collected from randomly selected locations in each barn. Each sample will be put on ice and delivered to a manure analysis laboratory for analysis of moisture content.

Quality Assurance/Quality Control

The project will have in place documented quality assurance/quality control (QA/QC) processes before data is collected. The QA/QC procedures will be based on EPA guidelines and implemented by each laboratory and during each sampling and measurement activity. The following is an outline about the QA/QC procedures:

General - Each laboratory will follow all protocols for this project and will utilize EPA approved standards, whenever they are available. Data will be analyzed using custom software (CAPECAB "Computations of Air Pollutant Emissions from Confined Animal Buildings) developed by the RSLS Group of Companies (Calgary, Alberta). Quality assurance and quality control at each mobile laboratory will include the use of properly maintained and reliable instrumentation, ready supply of spare parts, approved analytical methodologies and standard operation procedures, external validation of data, well-trained analysts, field blanks, electrical backups, audits, and documentation. Logs will be maintained for each instrument. The procedures contained in the "Quality Assurance Handbook for Air Pollution Measurement Systems," EPA 600/R-94/038C will serve as the basis for performance of all testing and related work activities. A detailed QA/QC plan, based on EPA guidelines, will be provided upon request.

Sampling - Chain of custody documentation will be used for samples, e.g. PM, etc., that are collected and taken off-site. Logged data files in the PC for the previous day will be checked the next business day to find and correct problems. TEOM vacuum lines in cold areas will be heated to prevent condensation.

Calibrations - The TEOM PM10 monitors will be verified using FRM method PM₁₀ samplers operated alongside. The barometers, temperature sensors, pitot tubes and dry gas meters and orifices associated with the Method 5 sampling train will be calibrated prior to and following the Method 5 testing.

Analytical Methods - Approved analytical methods will be used in all experiments. All analytical equipment will be properly maintained, tested regularly to ensure they are functioning properly, external validation of data will be done, and trained analysts will run all equipment. On-line results of all the continuous measurement variables will be displayed on a PC screen. Lab personnel will check the on-line display at least twice daily by either remote or on-site access. All electronic instrumentation will be protected by uninterruptible power systems.

Data Reduction and Reporting - On-screen data will be viewed on-line and downloaded regularly. Initial processing of measurement data will be done each week using CAPECAB. In

addition to computer storage, raw tables or graphs will be printed out and stored in a loose-leaf notebook in the laboratory. Final data processing will occur following each test.

Data Analysis, Assessment, and Interpretation

The layer barn emission rates will be determined by multiplying concentration data (mass/volume) by barn ventilation rate (volume/time). Since the emission data will span roughly six months, they will reveal minimums and maximums as well as trends that may be related to season, animal age, climate, and management.

As data is collected in real-time by the data acquisition computer, it will be converted to binary format and transferred automatically to a server at Purdue University. The software program CAPECAB allows immediate access to the data to visualize and inspect the data. CAPECAB also facilitates data validation via interactive and automatic flagging. It performs interpolations between concentration measurements, which coupled with continuous airflow measurements, allows the creation of an emission value every minute. From this 60-s database, the program creates averages over user-specified intervals (5-min, 60-min, 24-h, weekly, etc.). Thus, the following day, CAPECAB can create a report of hourly averages for the previous day. By Friday of each week, data will be summarized for the previous week.

C. Implementation

Subject to EPA's approval of the 7-day test and Method 5 Test results, and subsequently, if approved, the results from the Secondary Test Method, Ohio Fresh Eggs will commence the installation and operation of the Particulate Impaction System, in accordance with the timetable and terms set forth in Attachment A of the Consent Decree, in all operational deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities. Subject to EPA's approval of the Method 5 and Secondary Test Method test results from the Croton barn, Ohio Fresh Eggs will implement the other approved PM emission controls at the Croton Facilities. For any deep-pit layer barns at the Croton Facilities that are not converted to a belt battery manure handling system by December 31, 2005, Ohio Fresh Eggs will retrofit such barns with the Particulate Impaction System. The installation of the Particulate Impaction System will be completed in such barns on a sequential basis at an average rate of one barn every twenty-one (21) days.

SECTION V. CONCLUSION

Ohio Fresh Eggs proposes to test the effectiveness of the use of a Particulate Impaction System to reduce PM emissions from its deep-pit layer barns at its Croton, Mt. Victory and Marseilles Facilities. Ohio Fresh Eggs also proposes to test the effectiveness of using a new bird variety and a new feed ration to reduce PM emissions. Should the results of the 7-day test, the Method 5 Test, and the Secondary Test Methods confirm that the use of the Particulate Impaction System and other emission controls are effective in reducing PM emission, the Particulate Impaction System, and other emission controls, will be installed and operated at the layer barns in accordance with the requirements of Attachment A of the Consent Decree.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO, WESTERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

vs.

BUCKEYE EGG FARM, L.P.,
CROTON FARM, LLC, AND
ANTON POHLMANN,

Defendants.

CIVIL ACTION NO.
3:03 CV 7681

(Hon. David A. Katz)

CONSENT DECREE

Plaintiff United States of America, on behalf of the United States Environmental Protection Agency ("EPA"), has filed a Complaint and an Amended Complaint in this action, alleging that Defendants violated Section(s) 113, 114, 165, 502 and 503 of the Clean Air Act ("CAA"), 42 U.S.C. §§ 7413, 7414, 7475, 7661a, & 7661b, including violations of 40 C.F.R. Part 52, Subpart A, Section 52.21, and the Ohio State Implementation Plan (Ohio SIP), codified at 40 C.F.R. Part 52, Subpart KK (40 C.F.R. §§ 52.1870-52.1919). The Amended Complaint alleges that these violations occurred and are occurring at the Defendants' commercial egg production Locations in Ohio, specifically, (i) the Croton Location, located in Licking County, Croton, Ohio, (ii) the Marseilles Location, located in Wyandot County, Harpster, Ohio, and (iii) the Mt. Victory Location, located in Hardin County, LaRue, Ohio (collectively, "the Locations").

Defendant Buckeye Egg Farm, L.P. ("Buckeye") is a limited partnership organized under the laws of Delaware, and is a continuation of the partnership originally known as AgriGeneral Company, L.P. Defendant Croton Farm LLC ("Croton Farm") is a limited liability corporation

organized in Delaware on October 1, 1997 and has a one percent ownership interest in, and is the general partner of, Buckeye Egg Farm, L.P. Croton Farm LLC has two members: Anton Pohlmann and Poultry Investors Group, Inc. Poultry Investors Group, Inc. is an Ohio corporation and Anton Pohlmann is its sole shareholder. Defendant Anton Pohlmann has a ninety-nine percent ownership interest in, and is the limited partner of, Buckeye Egg Farm, L.P., and owns or owned the properties and buildings utilized by Buckeye for the commercial production of eggs at its Ohio Locations. These properties and buildings are or were leased to Buckeye.

Defendants do not admit any fact, interpretation or application of law, violation, or liability to the United States or jurisdiction except to the extent necessary to ensure enforcement of this Consent Decree arising out of the transactions or occurrences alleged in the Amended Complaint.

The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest. NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I, below, and with the with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. For purposes of this Consent Decree, Defendants agree that this Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to 28 U.S.C. § 1391 and 1395, and Section 113(b) of the CAA, 42 U.S.C.

§ 7413(b), because the Marseilles and the Mt. Victory Locations, two of the three Locations at which the violations alleged herein occurred, are located in the Western Division of this District. For purposes of this Decree, or any action to enforce this Decree, Defendants consent to the Court's jurisdiction over this Decree or such action and over Defendants, and consent to venue in this judicial district.

2. For purposes of this Consent Decree, Defendants agree that the Amended Complaint states claims upon which relief may be granted pursuant to Sections 113, 114, 165, 502 and 503 of the CAA, 42 U.S.C. §§ 7413, 7414, 7475, 7661a, & 7661b. Defendants waive service of the Amended Complaint and accept same for purposes of entering into this Consent Decree.

3. Notice of the commencement of this action has been given to the State of Ohio as required under Section 113(b) of the CAA, 42 U.S.C. § 7413(b).

II. PARTIES BOUND AND NOTICE OF TRANSFER

4. The provisions of this Consent Decree shall apply to and be binding upon the United States and upon Defendants and their partners, officers, agents, successors, assigns, and all persons acting on their behalf.

5. Defendants have sold the assets comprising the property at the Croton Location to Ohio Fresh Eggs, LLC ("Ohio Fresh"). Defendants are also currently negotiating the sale of assets comprising the Mt. Victory and Marseilles Locations to Ohio Fresh. These transfers will be conditioned upon Ohio Fresh's agreement to undertake the obligations required by this Decree, including the requirements relating to the Croton Location, and to impose these same obligations upon any subsequent transferees of these properties, as provided in a written agreement between Defendants and Ohio Fresh, enforceable by the United States as a third-party beneficiary of such agreement. This Consent Decree remains enforceable against Defendants

regardless of these transfers, as set forth in Paragraphs 6 and 7, infra, although the Parties recognize that Defendants and Ohio Fresh intend to enter into certain indemnification agreements between themselves.

6. Unless otherwise agreed to in writing by EPA, no change in ownership, corporate, or partnership status relating to any of the Buckeye Locations, or conveyance of title, easement, or other interest in the Buckeye Locations, including but not limited to any lease or transfer of assets or real or personal property, will alter the Defendants' obligation to comply with the requirements of this Consent Decree or to ensure compliance by any successor or assign of the Defendants, regardless of whether the Defendants continue to exist following the transaction.

7. It shall be Defendants' obligation to require compliance by any person purchasing, leasing or operating any of the Buckeye Locations with the relevant portions of the Consent Decree, and to reserve the right to monitor compliance by that person. Defendants shall remain liable to EPA for any stipulated penalties that may accrue due to any non-compliance by that person. In all cases it shall be Defendants' obligation with respect to any portion of the Buckeye Locations conveyed or leased to ensure access to property and information pursuant to Section X of this Consent Decree. Any purchase and sale agreement or lease or other instrument of conveyance for the Buckeye Locations shall contain a notice that the Buckeye Location at issue is the subject of this Consent Decree, setting forth the case caption and index number, and the Court having jurisdiction, and a memorandum of agreement setting forth this notice shall be filed with the local property recorder's office in connection with the consummation of any such sale or lease.

8. Except with respect to the anticipated transfer of the Marseilles and Mt. Victory locations to Ohio Fresh, Defendants, in addition to any notification required by the CAA, shall

notify EPA, the United States Attorney for the Northern District of Ohio, Western Division, and the United States Department of Justice, in accordance with Section XVIII of this Decree (Notices), at least thirty (30) days prior to a change in the operational and/or ownership control of any portion of any of the Buckeye Locations, including but not limited to the conveyance of title, easement, or other interest, including a leasehold interest. This notice shall also include a description of both the current and expected future activities on that portion of the Buckeye Location or Locations to be conveyed, leased, or otherwise alienated. At least fifteen (15) days prior to such transfer, Defendants shall provide a copy of this Consent Decree to the proposed transferee. Any transfer of ownership or operation of the Locations without complying with this Paragraph constitutes a violation of this Decree.

9. Defendants shall provide a copy of this Consent Decree to all officers, management employees, and agents whose duties might reasonably include compliance with any provision of this Decree. Defendants shall provide to each contractor hired to perform any of the Work (as defined herein) required by this Consent Decree or its Attachments (and to each person representing the Defendants with respect to the Work), a copy of all Sections of this Decree and/or Attachments relevant to the contractor's employment, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree and its Attachments. Defendants or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Defendants nonetheless shall be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. Nothing in this Consent Decree shall be construed to prevent Defendants from enforcing any contractual obligations of their contractors or subcontractors.

10. In any action to enforce this Consent Decree, Defendants shall not raise as a defense the failure by any of their officers, directors, employees, agents, or contractors to take any action necessary to comply with the provisions of this Consent Decree, subject to any claim of force majeure under Section XIII (Force Majeure).

III. DEFINITIONS

11. Terms used in this Consent Decree that are defined in the CAA or in regulations promulgated pursuant to the CAA shall have the meanings assigned to them in the CAA or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

“Buckeye Location” shall mean any one of Defendants’ commercial egg production locations in Ohio, specifically, the Croton Location, located in Licking County, Croton, Ohio, the Marseilles Location, located in Wyandot County, Harpster, Ohio, and the Mt. Victory Location, located in Hardin County, LaRue, Ohio (collectively, “the Buckeye Locations”).

“Compliance Schedule” means the document attached hereto as Attachment A;
“Complaint” or “Amended Complaint” shall mean the complaint, as amended, filed by the United States in this action;

“Consent Decree” or “Decree” shall mean this Decree and all appendices attached hereto (listed in Section XXV);

“Day” shall mean a calendar day unless expressly stated to be a working day.
In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day;

“Defendant(s)” shall mean Buckeye Egg Farm, L.P., Croton Farm LLC, and Anton Pohlmann;

"EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States;

"Interest" shall mean interest at the rate established by the Secretary of Treasury pursuant to 31 U.S.C. § 3717. Such interest shall be compounded annually on October 1st of each year. "Notify" and "Submit" and other terms signifying an obligation to transmit or communicate documents and information mean to deliver in person, deposit in the United States mail, or dispatch by express courier not later than the day that such transmission or communication is required by this Consent Decree. Should such day be a weekend day or a federal holiday, the delivery, deposit, or dispatch shall be due on the next working day;

"Paragraph" shall mean a portion of this Decree identified by an Arabic numeral;

"Parties" shall mean the United States and Defendants;

"Section" shall mean a portion of this Decree identified by a Roman numeral;

"State" shall mean the State of Ohio;

"United States" shall mean the United States of America, acting on behalf of EPA;

"Work" shall mean all activities Defendants are required to perform under this Consent Decree, together with its Attachments, except those required by Section XV (Information Retention).

IV. GENERAL PROVISIONS

12. Compliance with Applicable Law: All Work undertaken by Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal, state and local laws, permits, and regulations not addressed in this Consent Decree, including, without limitation, federal and state regulations governing the generation, treatment, storage, transport, and disposal of hazardous waste.

13. Permits: Where any portion of the Work requires a federal, state, or local permit or approval not addressed in this Consent Decree, Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

14. The Defendants may seek relief under the provisions of Section XIII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining any permit required for the Work, provided that Defendants have used due diligence in seeking to obtain such permit.

15. This Consent Decree is not, and shall not be construed to be, a permit or modification of a permit issued pursuant to any federal, state, or local statute, ordinance, or regulation.

V. PERFORMANCE OF THE WORK BY DEFENDANTS

16. Defendants shall comply with the provisions, terms, and schedules for operating and upgrading the Buckeye Locations as set forth in Attachment A, which is incorporated by reference into this Consent Decree.

17. If, prior to Defendants' Request for an Acknowledgment of Completion, pursuant to Section IX of this Consent Decree, EPA determines that Defendants' performance of the Work is inadequate or incomplete, EPA will notify Defendants in writing of the activities that must be undertaken to correct or complete the Work, and will set forth in the notice a reasonable period for Defendants to satisfactorily correct or complete the Work. Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to any right provided in this Consent Decree to invoke the dispute resolution procedures set forth in Section XIV (Dispute Resolution).

VI. SUBMISSIONS REQUIRING EPA APPROVAL

18. Approval of Deliverables. After review of any plan, report, or other item that is required to be submitted pursuant to this Consent Decree, EPA shall, in writing: (a) approve the submission; (b) approve the submission upon specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission or (e) any combination of the above.

19. If the submission is approved pursuant to Paragraph 18(a), Defendants shall take all actions required by the plan, report, or other item, as approved. If the submission is conditionally approved or approved only in part, pursuant to Paragraph 18(b) or (c), Defendants shall, upon written direction of EPA take all actions required by the approved plan, report, or other items that EPA determines are technically severable from any disapproved portions, subject to Defendants' right to dispute only any conditions imposed by EPA or any disapproved portions under Section XIV of this Decree (Dispute Resolution).

20. If the submission is disapproved in whole or in part pursuant to Paragraph 18(c) or (d), Defendants shall, within forty-five (45) days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval. Any Stipulated Penalties applicable to the original submission as provided in Section XII of this Decree shall accrue during the forty-five (45)-day period or other specified period, but shall not be payable unless the resubmission is untimely or is disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of Defendants' obligations under this Decree, Defendants shall be deemed to have failed to submit a plan, and the Stipulated Penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

21. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, EPA may again require Defendants to correct any deficiencies, in accordance with this Section, subject to Defendants' right to invoke Dispute Resolution and the right of EPA to seek Stipulated Penalties as provided in the preceding Paragraphs.

22. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon written approval by EPA, be enforceable under this Consent Decree. In the event EPA approves or conditions a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, such approval shall be in writing, and the approved, modified or conditioned portion shall be enforceable under this Consent Decree.

VII. REPORTING REQUIREMENTS

23. Defendants shall submit quarterly reports as set forth in Section III of Attachment A hereto, disclosing the status and progress of Work under this Consent Decree.

a. If Defendants violate, or have reason to believe that they may violate, any requirement of this Consent Decree, Defendants shall notify the United States of such violation and its likely duration in writing within ten (10) working days of the day Defendants first become aware of the violation, with an explanation of the likely cause of the violation and of the remedial steps taken, and/or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Defendants shall include a statement to that effect in the report. Defendants shall investigate to determine the cause of the violation and then shall submit an amendment to the report, including a full explanation of the cause of the violation, within thirty (30) days of the day Defendants become aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves Defendants of their obligation to provide the requisite notice for purposes of Section XIII (Force Majeure).

b. In the case of any violation or other event that may pose an imminent and substantial endangerment to the public health or welfare or the environment, Defendants shall notify EPA orally or by electronic or facsimile transmission as soon as possible, but not later than twenty-four (24) hours after Defendants first knew of the violation or event. This procedure is in addition to the requirements set forth in the preceding Paragraph.

24. All reports shall be submitted to the persons designated in Section XVIII of this Consent Decree (Notices). The reporting requirements of this Consent Decree do not relieve Defendants of any reporting obligations required by the CAA or implementing regulations, or by any other federal, State, or local law, regulation, permit, or other requirement. Any information provided pursuant to this Consent Decree may be used by the United States or Defendants in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

VII. CERTIFICATIONS

25. Whenever this Consent Decree, including Attachment A, requires the Defendants to submit a work plan, design, study, report, or other document, it shall be signed and certified as accurate by a responsible corporate officer as defined in 40 C.F.R. § 270.11(a)(1), or his duly authorized representative. This certification shall include the following language:

I certify under penalty of law that this document and any attachments to it were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing and willful submission of a materially false statement.

IX. COMPLETION OF THE WORK

26. Within ninety (90) days after Defendants conclude that all phases of the Work required under any section of Attachment A have been fully performed, Defendants shall submit one or more written reports by qualified professionals in the relevant technical fields, certifying in compliance with Section VII of this Consent Decree that the Work required by that section of Attachment A has been completed in full satisfaction of its requirements or that any failure to complete Work has been disclosed to EPA and rectified in accordance with Paragraphs 23(a) and 17 of this Consent Decree. These reports shall indicate the case name and civil action number, and shall be certified in accordance with Section VII.

27. If EPA so requests, Defendants shall schedule and conduct an inspection of the Buckeye Locations, to be attended by Defendants and EPA, to review the certified portion of the Work. The State shall also be invited to attend.

28. If, after review of the final written reports and certifications, and any inspection, EPA determines that any portion of the certified Work has not been completed in accordance with this Consent Decree and Attachment A, EPA will notify Defendants in writing of the activities that must be undertaken to complete this portion of the Work. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and Attachment A, or will require Defendants to submit a schedule to EPA for approval pursuant to Section VI (Submissions Requiring Agency Approval). Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right, if any, to invoke the dispute resolution procedures set forth in Section XIV (Dispute Resolution). Upon completion of these activities, Defendants shall submit revised written reports and certifications for the completed portion of the Work.

29. Within one hundred twenty (120) days of Defendants' completion of any remaining Work performed pursuant to Paragraph 28, or such other period as may be approved by EPA, Defendants shall submit a Request for Acknowledgment of Completion, referencing all final written reports and certifications submitted pursuant to Paragraph 26 or 28, supra, and Attachment A. Following its receipt of the Request for Acknowledgment of Completion, EPA may request an inspection or provide notice of activities that must be undertaken to complete the Work, as set forth in Paragraph 28. If EPA concludes, based on the initial or any subsequent Request for an Acknowledgment of Completion by Defendants, and after a reasonable opportunity for review and comment by the State, that the Work required under Attachment A has been performed in accordance with this Consent Decree, and that any failure to complete Work has been disclosed to EPA and rectified in accordance with Paragraphs 23(a) and 17 of this Consent Decree, EPA will so notify the Defendants in writing, which notice shall constitute the Acknowledgment of Completion.

X. ACCESS

30. Commencing upon the date of lodging of this Consent Decree, Defendants agree to provide the United States and its representatives, including its agencies, employees and authorized agents (including contractors and subcontractors), access at all reasonable times to the Buckeye Locations and any other property owned or controlled by Defendants or accessible to Defendants by contract, to which access is required for the implementation of this Consent Decree, for the purposes of conducting any activity related to this Consent Decree, including, but not limited to:

- a. Monitoring the Work;
- b. Verifying any data or information submitted to the United States;

- c. Conducting investigations relating to the Work;
- d. Obtaining samples relating to the Work;
- e. Inspecting and copying records, operating logs, contracts, or other

documents maintained or generated by Defendants or their agents related to the Work, subject to Defendants' right to assert the existence of privilege in accordance with Paragraph 64 of this Consent Decree; and

- f. Assessing Defendants' compliance with this Decree.

31. The activities authorized by this Section include, but are not limited to:

- a. Interviewing and obtaining oral, written, or recorded statements from personnel involved in activities pertaining to the Work required by this Consent Decree, whether such personnel are employed by the Defendants or by their contractors or subcontractors;
- b. Inspecting, reviewing, and copying all documents that relate to activities pertaining to the Work required by this Consent Decree, subject to Defendants' right to assert the existence of privilege in accordance with Paragraph 64 of this Consent Decree;
- c. Observing, photographing, or otherwise documenting the performance or completion of activities pertaining to the Work required by this Consent Decree; and
- d. Conducting such other monitoring and investigative activities as EPA deems

necessary to monitor activities pertaining to the Work required by this Consent Decree.

32. At the time of entering a Buckeye Location, EPA employees and representatives shall present valid credentials or other official authorization. The Defendants shall have the right to accompany EPA representatives throughout their presence at the Buckeye Location, and to monitor and record the investigative activities conducted by EPA, so long as such monitoring or recording does not delay or impede the investigative activities of EPA. If a recording of EPA's

investigatory activities is made by EPA, or the Defendants, a copy of the recording shall be provided to the other participant.

33. Defendants, upon request at the time of sampling, may obtain splits of any samples taken by the United States, EPA, the State, or their representatives, and, upon request, shall be provided with copies of the results of sampling, analysis, tests, or other raw data generated as a result of activities authorized under Paragraphs 30, 31 and 32 of this Consent Decree.

34. Notwithstanding the foregoing Paragraph or any other provision of this Consent Decree, the United States hereby retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under the CAA and any other applicable statutes, regulations or permits.

XI. CIVIL PENALTY

35. Defendants will pay a civil penalty of Eight Hundred Eighty Thousand Five Hundred and Ninety Eight Dollars (\$880,598.00) to the United States for the violations enumerated in the Complaint in this action.

a. Within five (5) working days of Defendants' receipt of notice of the lodging of this Consent Decree with the Court, Defendants shall establish an interest bearing escrow account meeting the requirements of this Paragraph in a federally-insured bank duly chartered in the State of Ohio, and shall remit to the escrow account funds in the amount of Eight Hundred Eighty Thousand Five Hundred and Ninety Eight Dollars (\$880,598.00).

b. Within the same time frame, Defendants shall send to the United States, by overnight mail directed to the addresses specified in Section XVIII (Notices) of this Decree, copies of the documents establishing and funding the escrow account, together with information containing the identities of the bank and of the escrow agent, the bank account under which the escrow

account is established, and a bank statement or deposit slip showing the initial balance of the escrow account. The correspondence shall also reference the civil action number of this case, and the Department of Justice ("DOJ") case number (90-11-2-06089).

c. All funds paid into the escrow account by Defendants shall remain in escrow and may not be withdrawn by any person except to make the payment required by Paragraph 35 of this Decree, unless the Court determines that entry of this Consent Decree is not in the public interest and declines to enter it as an order. If the Court declines to enter the Consent Decree as an order, all sums in the escrow account shall be governed by the Stipulation and Supplemental Stipulation of the Parties dated January 22, and 23, 2004. Copies of these Stipulations are attached hereto as Attachment B and C, respectively.

d. Within ten (10) working days of Defendants' receipt of notice of entry of the Consent Decree by the Court, Defendants shall remit the penalty payment to the United States. Payment shall be made by Electronic Funds Transfer ("EFT") to the U.S. Department of Justice lockbox bank at the Office of the United States Attorney for the Northern District of Ohio, Western Division, referencing the DOJ Number 90-11-2-06089, and the U.S.A.O. file number. Payment shall be made in accordance with instructions to be provided to Defendants following lodging of the Consent Decree by the Financial Litigation Unit of the U.S. Attorney's Office for the Northern District of Ohio, Western Division. Any EFTs received at the U.S. D.O.J. lockbox bank after 4:00 P.M. (Eastern Time) will be credited on the next business day. At the time of payment, Defendants shall simultaneously send written notice of payment and a copy of any transmittal documentation (which should reference DOJ case number 90-11-2-06089 and the civil action number of this case) to the United States in accordance with Section XVIII of this Decree (Notices).

36. In the event that the payment required by Paragraph 35 is not made in compliance with the terms of Paragraph 35, Defendants shall be subject to late charges by the United States in accordance with the Debt Collection Act of 1982, 31 U.S.C. § 3717 and 40 C.F.R. § 13.11. First, Defendants shall pay Interest on the unpaid balance at the rate established by the Secretary of Treasury pursuant to 31 U.S. § 3717. The Interest on the penalty shall begin to accrue on the 11th day following Defendants' receipt of notice of the entry of the Consent Decree, and shall continue to accrue at the rate specified through the date of payment. Such Interest shall be compounded each federal fiscal year. Second, Defendants shall pay a 6% per annum late fee on any principal amount not paid within ninety (90) days of the due date. Third, Defendants shall pay an administrative costs (handling) charge of fifteen dollars (\$15) for each month past the due date specified by the Consent Decree that it does not pay the penalty in full. Payments of Interest, late fees and handling charges made under this Paragraph shall be in addition to stipulated penalties provided in Section XII (Stipulated Penalties) or any other remedies or sanctions available to Plaintiffs by virtue of Defendants' failure to make timely payments under this Section. Payments made pursuant to this Paragraph shall be made in accordance with the procedures set forth in Paragraph 35.

37. Defendants agree that the payment of the Civil Penalty is not assignable or transferable to any other party in connection with any sale of assets pertaining to the Buckeye Locations.

38. Defendants shall not deduct the civil penalty paid under this Section in calculating their federal income tax.

XII. STIPULATED PENALTIES

39. If Defendants fail to pay the civil penalty required to be paid under Section XI of this Decree (Civil Penalty) when due, Defendants shall pay a Stipulated Penalty of \$1,000 per day for each day that the payment is late. Late payment of the civil penalty shall be made in accordance with Section XI, Paragraphs 35 and 36, above. Stipulated Penalties shall be paid in accordance with Section XII, Paragraph 47, below. All transmittal correspondence shall state that any such payment is for late payment of the civil penalty due under this Decree, or for Stipulated Penalties for late payment, as applicable, and shall include the identifying information set forth in Paragraphs 35 above.

40. Defendants shall be liable for Stipulated Penalties to the United States for violations of this Consent Decree as specified below, unless excused under Section XIII (Force Majeure). A violation includes failing to perform any of the Work required by the terms of this Decree, including any work plan or schedule approved under this Decree, according to all applicable requirements of this Decree and within the specified time schedules established by or approved under this Decree.

41. Compliance Milestones. The following Stipulated Penalties shall accrue per violation per day for each violation of the requirements of Attachment A:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500	1st through 14th day
\$750	15th through 30th day
\$1,500	31st day and beyond

42. Reporting Requirements. The following Stipulated Penalties shall accrue per violation per day for each violation of the reporting requirements of Section VII of this Consent Decree:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$250	1st through 14th day
\$500	15th through 30th day
\$1,000	31st day and beyond

43. Subject to the provisions of Section XIV (Dispute Resolution), Stipulated Penalties under this Section shall begin to accrue on the day after performance is due or on the day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated Penalties shall accrue simultaneously for separate violations of this Consent Decree. Defendants shall pay any Stipulated Penalty within thirty (30) days of receiving the United States' written demand, subject to the dispute resolution provision.

44. The United States may, in the unreviewable exercise of its discretion, reduce or waive Stipulated Penalties otherwise due it under this Consent Decree.

45. Stipulated Penalties shall continue to accrue as provided in Paragraph 43, above, during any Dispute Resolution, with Interest on accrued penalties payable and calculated at the rate established by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717 but need not be paid until the following:

- a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to the Court, Defendants shall pay accrued penalties determined to be owing,

together with Interest, to the United States within thirty (30) days of the effective date of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to the Court and the United States prevails, Defendants shall pay all accrued penalties determined by the Court to be owing, together with Interest, within sixty (60) days of receiving the Court's decision or order, except as provided in Subparagraph c, below;

c. If any Party appeals the District Court's decision, Defendants shall pay all accrued penalties determined to be owing, together with Interest, within fifteen (15) days of receiving the final appellate court decision.

46. Defendants shall pay Stipulated Penalties for violations occurring between the date of lodging and the Effective Date of this Consent Decree within thirty (30) days of the Effective Date of this Decree.

47. Defendants shall, as directed by the United States pursuant to Paragraph 43 and 44, pay Stipulated Penalties owing to the United States by EFT in accordance with Section XI, Paragraph 35(d), above.

48. Defendants shall not deduct Stipulated Penalties paid under this Section in calculating their federal income tax.

49. If Defendants fail to pay Stipulated Penalties according to the terms of this Consent Decree, the United States shall be entitled to collect Interest on such penalties, as provided for in 31 U.S.C. § 3717.

50. Subject to the provisions of Section XVI of this Consent Decree (Effect of Settlement/Reservation of Rights), the Stipulated Penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States for

Defendants' violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of the CAA Defendants shall be allowed a credit, for any Stipulated Penalties paid, against any statutory penalties imposed for such violation.

XIII. FORCE MAJEURE

51. A "force majeure event" is any event beyond the control of Defendants, their contractors, or any entity controlled by Defendants that delays the performance of any obligation under this Consent Decree despite Defendants' best efforts to fulfill the obligation. "Best efforts" includes anticipating any potential force majeure event and addressing the effects of any such event (a) as it is occurring and (b) after it has occurred, to prevent or minimize any resulting delay to the greatest extent possible. "Force Majeure" does not include Defendants' financial inability to perform any obligation under this Consent Decree.

52. Defendants shall provide notice orally or by electronic or facsimile transmission as soon as possible, but not later than five (5) days after the time Defendants first knew of, or by the exercise of due diligence, should have known of, a claimed force majeure event. Defendants shall also provide written notice, as provided in Section XVIII of this Consent Decree (Notices), within fourteen (14) days of the time Defendants first knew of, or by the exercise of due diligence, should have known of, the event. The notice shall state the anticipated duration of any delay; its cause(s); Defendants' past and proposed actions to prevent or minimize any delay; a schedule for carrying out those actions; and Defendants' rationale for attributing any delay to a force majeure event. Failure to give such notice shall preclude Defendants from asserting any claim of force majeure.

53. If the United States agrees that a force majeure event has occurred, the United States shall agree to extend the time for Defendants to perform the affected requirements for the time

necessary to complete those obligations. An extension of time to perform the obligations affected by a force majeure event shall not, by itself, extend the time to perform any other obligation. Where the United States agrees to an extension of time, the appropriate modification shall be made pursuant to Section XX of this Consent Decree (Modification).

54. If the United States does not agree that a force majeure event has occurred, or does not agree to the extension of time sought by Defendants, the United States' position shall be binding unless Defendants invoke Dispute Resolution under Section XIV of this Consent Decree. In any such dispute, Defendants bear the burden of proving, by a preponderance of the evidence that such claimed force majeure event is a force majeure event; that Defendants gave the notice required by Paragraph 52; that the force majeure event caused any delay Defendants' claim was attributable to that event; and that Defendants exercised best efforts to prevent or minimize any delay caused by the event.

XIV. DISPUTE RESOLUTION

55. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, such procedures shall not apply to actions by the United States to enforce obligations of the Defendants that have not been disputed in accordance with this Section.

56. Informal Dispute Resolution. Any dispute subject to dispute resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Defendants send the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed twenty (20) days from the date the dispute arises, unless that period

is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States shall be considered binding unless, within twenty (20) days after the conclusion of the informal negotiation period, Defendants invoke formal dispute resolution procedures as set forth below.

57. Formal Dispute Resolution. Defendants shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but may not be limited to, any factual data, analysis, or opinion supporting Defendants' position and any supporting documentation relied upon by Defendants.

58. The United States shall serve its Statement of Position within forty-five (45) days of receipt of Defendants' Statement of Position. The United States' Statement of Position shall include, but may not be limited to, any factual data, analysis, or opinion supporting that position and all supporting documents relied upon by the United States. The United States' Statement of Position shall be binding on Defendants, unless Defendants file a motion for judicial review of the dispute in accordance with the following Paragraph.

59. Defendants may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XVIII of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within forty-five (45) days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Defendants' position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

60. The United States shall respond to Defendants' motion within the time period provided in the Local Rules of this Court, unless the Parties stipulate otherwise. Defendants may file a reply memorandum, to the extent permitted by the Local Rules or the Parties' stipulation, as applicable.

61. In any dispute under this Paragraph, Defendants shall bear the burden of demonstrating that their position is consistent with this Consent Decree and the CAA and that Defendants are entitled to relief under applicable law. The United States reserves the right to argue that its position is reviewable only on the administrative record and must be upheld unless arbitrary and capricious or otherwise not in accordance with law.

62. The invocation of dispute resolution procedures under this Section shall not extend, postpone, or affect in any way any obligation of Defendants under this Consent Decree, not directly in dispute. Stipulated Penalties with respect to the disputed matter shall continue to accrue from the first day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 45, above. Except as otherwise prescribed by the Court, if Defendants do not prevail on the disputed issue, Stipulated Penalties shall be assessed and paid as provided in Section XII (Stipulated Penalties).

XV. INFORMATION RETENTION

63. Until two years after the termination of this Consent Decree, Defendants shall retain, and shall instruct their contractors and agents to preserve, all non-identical copies of all records and documents (including records or documents in electronic form) in their or their contractors' or agents' possession or control, or that come into their or their contractors' or agents' possession or control, and that relate in any manner to Defendants' performance of the Work under this Consent Decree. This record retention requirement shall apply regardless of

any corporate or institutional document-retention policy to the contrary. At any time during this record-retention period, the United States may request copies of any documents or records required to be maintained under this Paragraph.

64. At the conclusion of the document-retention period provided in the preceding Paragraph, Defendants shall notify the United States at least ninety (90) days prior to the destruction of any records or documents subject to the requirements of the preceding Paragraph, and, upon request by the United States, Defendants shall deliver any such records or documents to EPA. Defendants may assert that certain documents, records, or other information are privileged under the attorney-client privilege or any other privilege recognized by federal law, or that otherwise qualify as confidential business information pursuant to 40 C.F.R. Part 2. If Defendants assert such a privilege, they shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Defendants. However, no documents, reports, or other information created or received pursuant to the requirements of this Consent Decree shall be withheld on the grounds that they are privileged.

65. The Consent Decree in no way limits or affects any duty or obligation of Defendants to maintain records or information imposed by applicable federal or State laws, regulations, or permits.

XVI. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

66. This Consent Decree resolves and constitutes a release of the civil claims of the United States for the violations alleged in the Amended Complaint filed in this action through the date of lodging of the Consent Decree. Provided that Defendants comply with this Consent Decree from the date of lodging of the Consent Decree through its Effective Date, these claims shall also be resolved through the Effective Date of this Consent Decree. Upon EPA's issuance of an Acknowledgment of Completion pursuant to Paragraph 29, these claims shall be finally resolved and released. This Consent Decree shall not be construed to prevent or limit the rights of the United States to obtain penalties or injunctive relief under the CAA or implementing regulations, or under other federal or State laws, regulations, or permit conditions, except as expressly specified herein.

67. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree. Defendants reserve all legal and equitable defenses available to defend against enforcement of the provisions of this Consent Decree.

68. The United States further reserves all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, Defendants' Locations, whether related to the violations addressed in this Consent Decree or otherwise. Defendants reserve all legal and equitable defenses available to defend against such an assertion of any imminent and substantial endangerment.

69. Defendants are responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and Defendants' compliance with this Consent Decree shall be no defense to any action commenced pursuant to said laws, regulations, or permits. The United States does not, by its consent to the entry of this

Consent Decree, warrant or aver in any manner that Defendants' compliance with any aspect of this Consent Decree will result in compliance with provisions of the CAA.

70. This Consent Decree does not limit or affect the rights of Defendants or of the United States against any third parties not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Defendants.

71. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XVII. COSTS

The Parties shall bear their own costs in connection with this action and the Consent Decree, including attorneys' fees, except as otherwise authorized by applicable law.

XVIII. NOTICES

72. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

To the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-11-2-06089

Compliance Tracker
Air Enforcement and Compliance Assurance Branch
U.S. Environmental Protection Agency
Region 5, AE-17J
77 W. Jackson Blvd.
Chicago, IL 60604

and

Director, Office of Regulatory Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Mailcode 2241A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

To Defendants:

John D. Austin, Jr.
Patton Boggs LLP
2550 M Street, N.W.
Washington, DC 20037

David E. Northrop
Porter Wright Morris & Arthur LLP
41 South High Street
Columbus, OH 43215-6194

73. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

74. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XIX. RETENTION OF JURISDICTION

75. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Section XIV and XX, or effectuating or enforcing compliance with the terms of this Decree.

XX. MODIFICATION

76. Except as specifically provided for herein, there shall be no modifications or amendments of this Consent Decree without written agreement of the Parties to this Consent Decree and approval by this Court. Changes to the technical and schedule provisions set forth in Attachment A hereto may be made without approval by the Court under the terms set forth in Attachment A, or upon written agreement between the Defendants and EPA.

77. In the event that a transferee of property under Section II of this Consent Decree should desire to become a party to this Consent Decree and subject to all its terms and provisions, it may do so upon written approval of the United States, in which event a supplemental signature page will be affixed to this Consent Decree and filed with the Court.

XXI. EFFECTIVE AND TERMINATION DATES

78. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court. Provided that all penalties are paid pursuant to Sections XI (Civil Penalty) and XII (Stipulated Penalties) of this Consent Decree, the Consent Decree shall be terminated as follows:

a. Following EPA's issuance of the Acknowledgment of Completion of the Work pursuant to Section IX of this Consent Decree, the parties may move jointly to terminate this Consent Decree based on their representations that all its requirements have been satisfied, and the Court may order such termination after conducting such inquiry as it deems appropriate.

b. If the United States does not issue an Acknowledgment of Completion of the Work following a request by the Defendants in accordance with Section IX of this Consent Decree, then Defendants may invoke Dispute Resolution under Section XIV, and subsequent judicial review under Paragraph 59, of this Decree.

79. Termination of this Consent Decree in accordance with Paragraph 78, supra, shall not terminate the requirements of Section XV (Information Retention), which shall terminate pursuant to the terms of that Section.

80. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Defendants consent to entry of this Consent Decree without further notice.

XXII. SIGNATORIES/SERVICE

81. Each undersigned representative of Defendants and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

82. This Consent Decree may be signed in counterparts, and such counterpart signature pages shall be given full force and effect .

83. Defendants agree not to oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified Defendants in writing that it no longer supports entry of the Decree.

84. Defendants agree to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXIII. INTEGRATION

85. This Consent Decree, including Attachments A, B, and C, constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than these Attachments, which are attached to and incorporated in this Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Decree.

XXIV. FINAL JUDGMENT

86. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States and Defendants. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

XXV. APPENDICES

87. The following appendices are attached to and incorporated into this Consent Decree: "Attachment A" is the Compliance Schedule setting forth the Work required of the Defendants under this Consent Decree. "Attachment B" is the Stipulation to Dismiss, Without Prejudice, Plaintiff's Application for a Prejudgment Writ of Attachment, filed with the Court in this matter on January 22, 2004. "Attachment C" is the Supplemental Stipulation to the Stipulation to Dismiss, Without Prejudice, Plaintiff's Application for a Prejudgment Writ of Attachment, filed with the Court in this matter on January 23, 2004.

UNITED STATES DISTRICT JUDGE
Northern District of Ohio, Western Division

FOR PLAINTIFF UNITED STATES OF
AMERICA

Tom Sansonetti
THOMAS L. SANSONETTI
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice


By: Deborah M. Reyher
DEBORAH M. REYHER
Senior Attorney
Environmental Enforcement Section
U.S. Department of Justice
Washington, D.C.
(202) 514-4113

GREGORY A. WHITE
United States Attorney
Northern District of Ohio

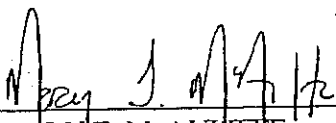
By: Robert Young
ROBERT YOUNG
Assistant United States Attorney
4 Seagate, Suite 308
Toledo, Ohio 43604

By: Phyllis P. Harris
PHYLLIS HARRIS
Acting Assistant Administrator
Office of Enforcement & Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

By: Robert A. Kaplan
ROBERT A. KAPLAN
Division Director
MYRON A. ENG
Attorney
Office of Regulatory Enforcement
Office of Enforcement & Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460



THOMAS V. SKINNER
Regional Administrator
U.S. EPA, Region 5
77 West Jackson Blvd.
Chicago, IL 60604



MARY T. McAULIFFE
Associate Regional Counsel
United States Environmental Protection
Agency
77 West Jackson Blvd.
Chicago, IL 60604

FOR DEFENDANTS

A Pohl
ANTON POHLMANN

Date: Jan. 30, 2004

BUCKEYE EGG FARM, L.P.

By: Croton Farm LLC, its General Partner

Sole Members:

A Pohl
Anton Pohlmann

Poultry Investors Group, Inc., an Ohio corporation

By: A Pohl
Anton Pohlmann

CROTON FARM LLC

A Pohl
Anton Pohlmann

Poultry Investors Group, Inc., and Ohio Corporation

By: A Pohl
Anton Pohlmann

ATTACHMENT A
Buckeye Egg Farm - Emission Controls

1. Defendants shall implement the requirements of this Attachment A to the Consent Decree between the United States and Defendants in accordance with the schedules provided herein at each layer barn at Buckeye's Croton, Marseilles and Mt. Victory Locations.

a. Nothing in this Attachment shall be deemed to prevent the re-opening of currently closed layer barns at the Marseilles Location pursuant to the permits issued by ODA on February 2, 2004, but the operation of such re-opened barns shall thereafter be subject to this Attachment. All requirements of this Attachment A are subject to the Consent Decree, including, without limitation, provisions relating to the submission of documents requiring EPA approval, notice, and stipulated penalties, unless otherwise specified in this Attachment.

b. Nothing in the Consent Decree or this Attachment shall be deemed to preclude, be deemed inconsistent with, or be deemed as an adverse admission with respect to Buckeye's, or any successor's, right to assert that various sites at the Croton Location constitute separate facilities or separate emission sources for purposes of calculating emissions from the stationary sources or in determining the applicability of any requirements under the federal Clean Air Act, in connection with any action other than an action brought pursuant to this Consent Decree. Nothing in the Consent Decree or this Attachment shall preclude the United States from asserting in any such action that various sites at the Croton Location constitute only one facility or emission source for purposes of calculating emissions or in determining the applicability of any requirement under the Clean Air Act.

2. Defendants have proposed a system for controlling particulate matter (PM) emissions from layer barns at the Croton, Marseilles and Mt. Victory Locations using new controls or adaptations of controls used elsewhere. Similarly, Defendants propose the use of enzyme additive products to control ammonia emissions. This Attachment provides a protocol for testing the PM emission controls or adaptations of controls used elsewhere and enzyme additive product, and for implementing or altering the approaches proposed by Defendants based on the data collected.

I. PARTICULATE MATTER CONTROLS

A. System Design

3. By March 15, 2004, Defendants shall submit to EPA for review and approval a Proposed PM Control Design and Implementation Plan ("PM Plan") for a system of weighted plastic sheeting and impaction media, and/or other emission controls, to be installed and operated alongside the exhaust fans in its layer barns as provided in Section I.C, below, to reduce PM emitted via the fans into the ambient air (the "Particulate Impaction System" or "System"), consistent with the System outlined in Exhibit 1 hereto. The PM Plan shall include:

- a. A description of the proposed Particulate Impaction System;

b. An explanation of the Particulate Impaction System design and installation procedures;

c. A summary of the estimated costs associated with the construction, installation, implementation and/or operation of the proposed Particulate Impaction System, including any estimated cost savings associated with the use of the System;

d. A description of the expected PM emission reductions and reasons for the reductions expected to result from the use of the proposed Particulate Impaction System. This description must include any reasonably available data that substantiates the expected emission reductions from the Defendants' barns, as well as other locations where the Defendants are aware that the Particulate Impaction System has been or is expected to be installed;

e. A schedule for reviewing any bids associated with the construction and installation of the Particulate Impaction System, purchasing all relevant equipment, construction/installation of the Particulate Impaction System, start-up of the Particulate Impaction System, and time necessary to adjust the System for optimum performance;

f. Proposed reporting and record-keeping requirements that will allow EPA to track Defendants' progress toward installing, completing and operating the proposed Particulate Impaction System; and

g. A description of any other emissions or waste streams expected to result from the use of the Particulate Impaction System that could have adverse effects on the environment, public health or welfare, and a description of how such emissions or waste streams will be managed.

4. The PM Plan shall also propose a protocol for testing the Particulate Impaction System consistent with the requirements outlined in Section I.B , below.

5. Defendants may include in the PM Plan additional or alternative emission controls or proposed alterations to the Particulate Impaction System outlined in Exhibit 1 , or to the testing requirements set forth in Section I.B , infra, based on Defendants' and EPA's evaluation of the Particulate Impaction System and any other potential emissions control devices, systems or operational restrictions. EPA's approval of control systems, operational restrictions, testing conditions and/or schedules in the PM Plan that depart from the requirements of this Attachment shall be deemed an amendment of this Attachment. Any such approval must be in writing. If EPA does not approve such proposed alterations, then the requirements of this Attachment shall apply. EPA's decision to approve or disapprove any alterations to the Particulate Impaction System or to the testing requirements set forth in this Attachment shall not be subject to the Dispute Resolution provisions of the Consent Decree, and shall only be subject to review by the United States District Court if Defendants can establish on the administrative record that EPA's decision was arbitrary and capricious, pursuant to the Administrative Procedures Act, 5 U.S.C. § 706(2)(A).

6. Defendants shall provide copies of the PM Plan to the Ohio Environmental Protection Agency ("OEPA") and the Ohio Department of Agriculture ("ODA").

B. Testing

1. Marseilles/Mt. Victory Locations

7. Within thirty (30) days of receipt of EPA's approval of the PM Plan, Defendants shall install the approved Particulate Impaction System, and other PM emission control measures in the approved PM Plan, at one fan in a layer barn with a deep-pit manure management system at the Mt. Victory Location, in accordance with the approved PM Plan.

8. Within thirty (30) days of the installation of the Particulate Impaction System, pursuant to Paragraph 7, above, Defendants shall complete a test at the selected fan to measure PM and PM-10 concentrations to determine the control efficiency of the Particulate Impaction System. The test will be conducted using the following protocol, to be further developed in accordance with Paragraph 4: On the inlet side of the Particulate Impaction System, install a TEOM 1400A PM-10 sampling head and microbalance, and a gravimetric TSP device. Such devices will also be installed at the outlet side, between the Particulate Impaction System and the ventilation fan. The fan shall be operated continuously and measurements shall be conducted such that any difference between inlet and outlet TSP and PM-10 concentrations can be quantitatively determined to derive the PM control efficiency of the Particulate Impaction System. The sample integration time for the PM-10 analyzer shall be thirty (30) minutes, and the integration time for the TSP samplers shall be daily, or as determined on-site by filter loading. It is anticipated that the test will be conducted for approximately seven (7) days to assess any variability in control efficiency as the Particulate Impaction System accumulates PM. A temporary shelter shall be stationed next to the layer barn to house the TEOM control units and to provide space for the transfer of gravimetric filters to containers for off-site laboratory analysis.

9. Within fourteen (14) days of completion of the tests required in Paragraph 8, supra, Defendants shall submit the test results to EPA. Within twenty-one (21) days of completion of these tests, Defendants shall also submit any proposed changes to the PM Plan to increase the efficacy of the Particulate Impaction System, for EPA's review and approval in accordance with Paragraphs 3, 4, 5, and 6, supra.

10. Within forty-five (45) days of EPA's approval of any changes to the PM Plan, or written confirmation that no changes are required, Defendants shall commence installation of the Particulate Impaction System at all fans throughout one layer barn at the Mt. Victory Location, as selected in the PM Plan, in accordance with the schedule set forth in the approved PM Plan.

11. Within one hundred eighty (180) days of completion of installation of the Particulate Impaction System at all fans in one barn, as required in Paragraph 10, supra, Defendants shall commence emissions testing at that barn using the secondary testing method described in Exhibit 2 hereto, for a period of six (6) continuous months that shall include the month of

August 2004. Defendants shall simultaneously commence emissions testing using the secondary method at a control barn at Mt. Victory selected in the PM Plan of comparable design, age, chicken population, and other relevant parameters. A summary of the validated data, in spreadsheet format, obtained during the secondary emission testing shall be electronically submitted to EPA on a monthly basis throughout the emission testing period, or on such other periodic basis as may be agreed to by the parties. This test may be conducted at the same time as the testing required in Paragraph 29, infra.

12. Within sixty (60) days of completion of the secondary method emissions testing required in Paragraph 11, supra, Defendants shall submit the final month of validated test data, and within thirty (30) days thereafter shall submit their conclusions regarding the annual emission rate to EPA. Defendants shall also submit at this time any proposed changes to the PM Plan to increase the efficacy of the Particulate Impaction System, for EPA's review and approval in accordance with Paragraphs 3,4, 5, and 6, supra.

2. Croton Location

13. At the Croton Location, Defendants are currently effecting a change in bird variety and feed that Defendants believe will substantially reduce particulate emissions. Defendants also will be commencing the use of a manure enzyme additive at the layer barns at the Croton Location. These changes and any other operational changes that Defendants believe will reduce PM emissions shall be included by Defendants in the PM Plan for the Croton Location submitted to EPA for approval pursuant to Paragraphs 3 4, 5 and 6.

14. By May 15, 2004, Defendants shall complete either a Method 5 or 17 PM emissions test over a five (5) day period on a belt battery barn containing chickens of the new variety and consuming the new feed, for comparison with the Method 17 testing on a belt battery barn conducted in August/September 2003. Defendants shall propose in the PM Plan a barn to be tested for this purpose, to most closely approximate conditions in the barn tested in August/September 2003.

15. Within thirty (30) days of completion of the Method 5 or 17 test required in Paragraph 14, supra, Defendants shall submit the test results to EPA, together with any proposed changes to the PM Plan for the Croton Location to further decrease PM emissions, for EPA's review and approval in accordance with Paragraphs 3,4, 5, and 6, supra. Any proposed changes to the PM Plan for the Croton Location shall also include a proposed protocol and schedule for testing and implementing the proposed changes.

16. Within forty-five (45) days of EPA's approval of the test results obtained under Paragraph 14 and approval of any modification of the PM Plan for the Croton Location, Defendants shall commence emission testing at a barn at the Croton Location with the new bird variety and feed and with a belt battery manure handling system, using the secondary testing method described in Exhibit 2 hereto, for a period of six (6) continuous months that shall include the month of August 2004. A summary of the validated data, in spreadsheet format, obtained during the secondary emission testing shall be electronically submitted to EPA on a monthly

basis throughout the emission testing period, or on such other periodic basis as may be agreed to by the parties.

17. Within sixty (60) days of completion of the secondary method emissions testing required in Paragraph 16, supra, Defendants shall submit the final month of validated test data, and within thirty (30) days thereafter shall submit their conclusions regarding the annual emission rate to EPA. Defendants shall also submit at this time any proposed changes to the PM Plan to further reduce PM emissions at the Croton Location, for EPA's review and approval, in accordance with Paragraphs 3, 4, 5, and 6, supra. Any proposed changes to the PM Plan for the Croton Location shall also include a proposed protocol and schedule for testing and implementing the proposed changes.

C. Implementation

18. Within sixty (60) days of Defendants' receipt of EPA's analysis of the test results obtained pursuant to Paragraphs 11 and 16, respectively, or any subsequent testing following EPA's approval of any changes to the PM Plan, Defendants shall commence installation of PM emission control measures under Section I.C.1 or I.C.2, infra, as applicable.

1. Marseilles/Mt. Victory Locations

a. Emissions Less than 250 tpy

19. If EPA determines that test results obtained, pursuant to Paragraph 11, supra, using the methodology set forth in Exhibit 3, indicate that PM emissions using the Particulate Impaction System and any other PM emission control measures approved in the PM Plan will be less than 250 tons per year ("tpy") per Location for either or both the Marseilles and Mt. Victory Locations, then Defendants shall, within sixty (60) days of the EPA determination, commence installation of the Particulate Impaction System in all the layer barns at the Location(s) satisfying this condition, and shall complete the installation within a year of EPA's determination, or in accordance with any modified schedule set forth in the approved PM Plan, but shall not be obligated under the Consent Decree to develop or install additional PM emission controls. Defendants shall not be obligated to submit applications for any applicable federally enforceable permits that may be triggered by emissions less than 250 tpy until one hundred twenty (120) days following receipt of EPA's analysis of the results of tests conducted under Paragraph 11 and reported under Paragraph 12, or any subsequent testing following EPA's approval of any changes to the PM Plan.

20. Defendants shall continue to operate the Particulate Impaction System installed in each layer barn at the Marseilles and Mt. Victory Locations in accordance with Paragraph 19, supra, until one of the following conditions is met:

a. EPA approves in writing an alternative PM control system to be implemented in lieu of or in addition to the Particulate Impaction System and any other PM emissions controls approved in the PM Plan; or

b. A layer barn is closed and no longer houses poultry. Any such layer barn closure must be completed in accordance with all applicable federal, state and local requirements. If Defendants at any time intend to reopen or replace one or more closed barns, they must notify EPA, ODA and OEPA in writing of this plan prior to reopening, and may not reopen any of the closed barns or construct replacement barns until the approved Particulate Impaction System or other PM emission controls approved by EPA are installed therein, or one of the other conditions of Paragraph 20 are met. This provision does not apply to temporary barn closures of less than twelve (12) weeks in duration due to normal operational practices, such as replacement of old layers, routine maintenance and repair, replacement of equipment, clean-out, disease, or infection;

c. The Consent Decree is terminated in accordance with the provisions thereof; or

d. Federally-enforceable permit(s) is/are issued that:

1. imposes operational controls under the synthetic minor permit requirements of the Ohio State Implementation Plan (see Ohio Administrative Code ("OAC") Rules 3745-31-02 and 3745-31-05); or

2. includes PM emission control requirements that equal or exceed those required by this Attachment.

e. A federal agency determines that the operation of the Particulate Impaction System may be harmful to human health, worker safety, the environment, or the poultry, and that the Particulate Impaction System should no longer be operated. Within thirty (30) days of such a determination, Defendants shall submit a proposed alternative PM Plan, in accordance with Paragraphs 3, 4, 5, and 6, supra.

b. Emissions Greater than 250 tpy

21. If EPA determines that test results obtained pursuant to Paragraph 11, supra, using the methodology set forth in Exhibit 3, indicate that PM emissions using the Particulate Impaction System and any other PM emission controls in the approved PM Plan will be greater than 250 tpy at either or both the Marseilles and the Mt. Victory Locations, then, within sixty (60) days of this determination, Defendants shall elect between the following options:

a. Defendants shall propose alternative or additional controls to further reduce PM emissions at the affected Location(s), subject to EPA review and approval, in accordance with Paragraphs 3, 4, 5, and 6, supra. Any such proposal must also include further testing requirements and a proposed schedule for implementation of the alternative or additional controls at all Locations where PM emissions are calculated to exceed 250 tpy. Defendants shall implement the testing protocol and install the alternative or additional controls following EPA's written approval, in accordance with the approved testing protocol and implementation schedule,

and shall comply with Paragraph 20, supra. If EPA does not approve the proposed alternative or additional controls, then Defendants shall comply with Paragraph 21.b , infra;

or

b. Defendants shall apply for a federally enforceable permit to include particulate emission control requirements that equal or exceed those required by this Attachment, and shall comply with all other applicable requirements of the Clean Air Act.

2. Croton Location

a. Emissions Less than 250 tpy

22. If EPA determines that the secondary test method, described in Exhibit 2 hereto, test results, and/or any subsequent test results, compiled pursuant to Paragraphs 16 and 17, indicate that PM emissions from the Croton Location following the conversion to belt battery systems and using the new bird variety and feed approved in the PM Plan for the Croton Location will be less than 250 tpy, then Defendants shall not be required to install the Particulate Impaction System, and/or any other PM emission controls approved in the PM Plan, at the Croton Location, but shall continue to comply with the approved PM Plan for the Croton Location until terminated in accordance with the requirements of Paragraph 20, supra. Should Defendants wish to make further changes in poultry variety or feed or other measures submitted in the approved PM Plan to control PM emissions, it may do so upon a demonstration satisfactory to EPA, and confirmed by EPA in writing, that such changes will not increase emissions above the 250 tpy level. Defendants shall not be obligated to submit applications for any applicable federally enforceable permits that may be triggered by emissions less than 250 tpy until one hundred twenty (120) days following receipt of EPA's analysis of the results of tests conducted under Paragraph 16 and reported under Paragraph 17, or any subsequent testing following EPA's approval of any changes to the PM Plan.

b. Emissions Greater than 250 tpy

23. If EPA determines that the secondary test method, described in Exhibit 2 hereto, test results, and any other test results, compiled pursuant to Paragraphs 16 and 17, indicate that PM emissions from the Croton Location will exceed 250 tpy, then within sixty (60) days of EPA's determination Defendants shall:

a. Submit to EPA for review and approval, in accordance with Paragraphs 3, 4, 5, and 6, a schedule to install the Particulate Impaction System (or other PM emission controls approved in the PM Plan) at all high rise layer barns operating at the Croton Location that are not converted to belt battery manure handling systems before December 31, 2005. Defendants shall operate the Particulate Impaction System or other approved PM controls at each such layer barn until it is converted to belt battery manure handling systems as required under the ODA permits issued on December 23, 2003, or modified or re-issued thereafter; and

b. Submit to EPA for review and approval, in accordance with Paragraphs 3, 4, 5, and 6, a proposal to test and install PM emission controls on the Croton Location layer barns following their conversion to belt battery systems as required under the ODA permits issued on December 23, 2003, or modification or reissuance thereafter. This proposal may consist of:

1. A modified version of the Particulate Impaction System suited to the design of the renovated barns; or

2. A proposed modification of the PM Plan for the Croton Location designed to reduce PM emissions from the converted layer barns through other means.

Defendants shall implement the testing protocol and install the modified, alternative, or additional controls following EPA's written approval, in accordance with the approved testing protocol and implementation schedule, and shall comply with Paragraph 20, supra. If EPA does not approve the proposed alternative or additional controls, then Defendants shall comply with Paragraph 24.b, infra.

24. If EPA determines that test results at the Croton Location obtained pursuant to Paragraph 23.b indicate that PM emissions from the Croton Location will be less than 250 tpy as a result of the modified PM Plan, then Defendants shall comply with Paragraph 22, supra. If EPA determines that test results for any proposed modification of the PM Plan for the Croton Location pursuant to Paragraph 23.b indicate that PM emissions from the Croton Location will continue to exceed 250 tpy, then, within sixty (60) days of this determination, Defendants shall elect between the following options:

a. Defendants shall propose alternative or additional controls to reduce PM emissions at the Croton Location below 250 tpy, subject to EPA review and approval, in accordance with Paragraphs 3, 4, 5, and 6, supra. Any such proposal must also include further testing requirements and a proposed schedule for implementation of the alternative or additional controls. Defendants shall implement the testing protocol and install the alternative or additional controls, following EPA's written approval, in accordance with the approved testing protocol and implementation schedule, and shall comply with Paragraph 20, supra. If EPA does not approve the proposed alternative or additional technology, then Defendants shall comply with Paragraph 24.b, infra;

or

b. Defendants shall apply for a federally enforceable permit for the Croton Location to include particulate emission control requirements that equal or exceed those required by this Attachment, and shall comply with all other applicable requirements of the Clean Air Act.

II. AMMONIA CONTROLS

A. Croton Location

25. Defendants shall convert the barns at the Croton Location to belt battery manure handling systems, in accordance with the permits issued by ODA on December 23, 2003, or as modified or re-issued thereafter.

26. Each barn at the Croton Location not converted by December 31, 2004 to a belt battery manure handling system shall be included in the testing and implementation plans required under Section II.B, infra, until such time as it is converted to a belt battery manure handling system.

B. Enzyme Additive System

27. By March 1, 2004, Defendants shall submit to EPA for review and approval a Proposed Ammonia Emissions Control Design and Implementation Plan ("Ammonia Plan") for application of an enzyme additive at all layer barns at the Marseilles and Mt. Victory Locations and at all Croton Location barns subject to Paragraph 26, supra, to control ammonia emissions. The Ammonia Plan shall include:

- a. A description of the proposed enzyme additive product or system;
- b. An explanation of the enzyme additive application or other operational procedures;
- c. A summary of the estimated costs associated with the purchase and application of the proposed enzyme additive product or system, including any estimated cost savings associated with the use of this product or system;
- d. A description of the expected emission reductions and reasons for the reductions resulting from the proposed enzyme additive product or system. This description must include any reasonably available data that substantiates the expected emission reductions obtained from the Defendants' barns as well as other locations where the Defendants are aware the enzyme additive product or system has been or is expected to be installed or applied;
- e. A schedule for reviewing any bids associated with the purchase of the enzyme additive product or system, purchasing all relevant product and equipment, any construction necessary for the application or operation of the product or system, start-up of the enzyme additive application process, and time necessary to adjust the enzyme application system for optimum performance;
- f. Proposed reporting and record-keeping requirements that will allow EPA to track Defendants progress toward implementing, completing and operating the proposed enzyme additive application process; and

g. A description of any other emissions or waste streams expected to result from the use of the enzyme additive product or system that could have adverse effects on the environment, public health or welfare, and a description of how such emissions or waste streams will be managed.

The Ammonia Plan shall also propose a protocol for testing the enzyme additive product or system consistent with the requirements outlined in Paragraphs 28 and 29, infra.

28. Within thirty (30) days of EPA's approval of the Ammonia Plan, Defendants shall commence bench scale testing of the enzyme additive product or system, in accordance with the approved Ammonia Plan. Within fifteen (15) days of completion of the bench scale testing of the enzyme additive product or system, Defendants shall submit the test results to EPA. If EPA determines that the bench scale tests indicate that the enzyme additive will reduce ammonia emissions by less than 50%, then Defendants shall submit for EPA's review and approval proposed changes to the Ammonia Plan to increase the efficacy of the enzyme additive product or system, or to test alternative products or systems for reducing ammonia emissions by 50% or more. These proposals shall be submitted for EPA's review and approval, in accordance with Paragraphs 27, 4, 5, and 6, supra, and any approved proposal for achieving the required ammonia emission reduction, where appropriate, shall again be bench scale tested under this Paragraph.

29. Within sixty (60) days of EPA's approval of any revisions to the Ammonia Plan, or EPA's written confirmation that no changes are required, Defendants shall commence application of the enzyme additive product or system in one layer barn with a deep-pit manure management system as selected in the approved Ammonia Plan, and shall commence emissions testing at that layer barn using the secondary testing method described in Exhibit 2 hereto, for a period of six (6) continuous months that shall include the month of August 2004. Defendants shall simultaneously commence emission testing using the secondary method at a control barn selected in the Ammonia Plan of comparable design, age, chicken population, and other relevant parameters. A summary of the validated data, in spreadsheet format, obtained during the secondary emission testing shall be electronically submitted to EPA on a monthly basis throughout the emission testing period. This testing may be conducted at the same time as the testing required in Paragraph 11.

30. Within sixty (60) days of completion of the secondary method emissions testing required in Paragraph 29, supra, Defendants shall submit the test results to EPA. Defendants shall also submit at this time any proposed changes to the Ammonia Plan to increase the efficacy of the enzyme additive products or controls or to propose alternative ammonia controls and testing protocols for EPA's review and approval, in accordance with Paragraphs 27, 4, 5, and 6, supra.

31. Within sixty (60) days of EPA's approval of any revisions to the Ammonia Plan or EPA's written confirmation that no changes are required, Defendants shall commence use of the approved ammonia emissions products or controls at all operational layer barns subject to this Section II.B, in accordance with the approved Ammonia Plan and applicable manufacturer instructions and guidelines for the use of such products or controls, and shall continue the use of

such products or controls at all operational layer barns at those locations until one of the following conditions is met:

- a. EPA approves in writing an alternative ammonia control system to be implemented in lieu of the previously approved ammonia controls ;
 - b. A layer barn is closed and no longer houses poultry. Any such closure must be completed in accordance with all applicable federal, state and local requirements. If Defendants at any time intend to reopen or replace one or more closed barns, they must notify EPA, ODA and OEPA in writing of this plan prior to reopening, and may not reopen any of the closed barns or construct replacement barns without use of the ammonia control system approved by EPA. This provision does not apply to temporary barn closures of less than twelve (12) weeks in duration due to normal operational practices, such as replacement of old layers, routine maintenance and repair, replacement of equipment, clean-out, disease, or infection;
 - c. The Consent Decree is terminated in accordance with the provisions thereof;
- or
- d. A federal agency determines that the operation of the enzyme additive products or controls may be harmful to human health, worker safety, the environment, or the poultry, and that the enzyme additive products or controls should no longer be used. Within thirty (30) days of such a determination, Defendants shall submit a proposed alternative Ammonia Plan, in accordance with Paragraphs 27, 4, 5, and 6, supra.

III. REPORTING OBLIGATIONS

32. Defendants must submit quarterly progress reports to EPA beginning April 30, 2004, or such later date as agreed by EPA in writing. Quarterly progress reports must then be submitted in accordance with Section VII of this Consent Decree no later than thirty (30) days after the end of any given quarter (quarters shall end on December 31, March 31, June 30, and September 30 of each year). Each quarterly progress report shall include, at a minimum, the following information, unless otherwise agreed in writing by EPA:

- a. Identification of any operational layer barns to be closed at any of the Croton, Mt. Victory and Marseilles Locations in the following quarter, including the anticipated date of closure, and actions to be taken prior to and during the closure process to control and/or minimize PM and ammonia emissions;
- b. Identification of any layer barns at the Croton Location to be converted to belt battery manure handling systems during the next quarter, pursuant to the permits issued by ODA on December 23, 2003 or modified or re-issued thereafter, including the anticipated date of conversion, and actions to be taken prior to and during the conversion process to control and/or minimize PM and ammonia emissions;

- c. Particulate Impaction System installation schedule for each Location for the following quarter;
- d. Particulate Impaction System visual inspection and dust removal frequency;
- e. Particulate Impaction System dust removal and disposal practices;
- f. Particulate Impaction System maintenance, repairs, and/or replacement;
- g. Impacts of Particulate Impaction System on building ventilation;
- h. Any building fan operation data collected by Defendants;
- i. Changes in chicken populations over the prior quarter (including the number of barns converted to new variety and/or feed);
- j. Use of additional PM reduction practices, if any, in combination with the Particulate Impaction System; and
- k. Dates of use of enzyme additive to control ammonia emissions in each operational layer barn, and the amounts used during each application.

Exhibit 1 General Particulate Impaction System Design

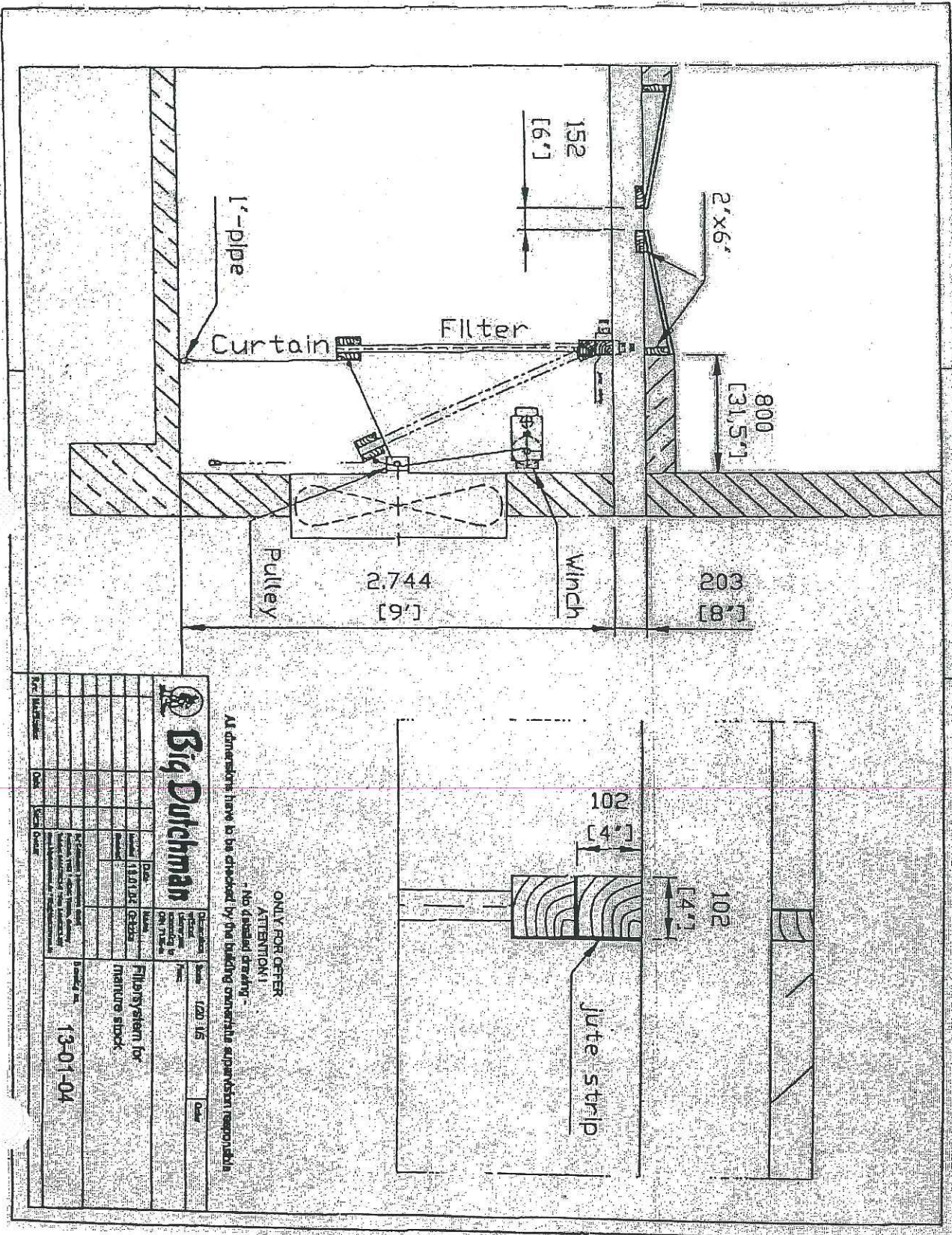
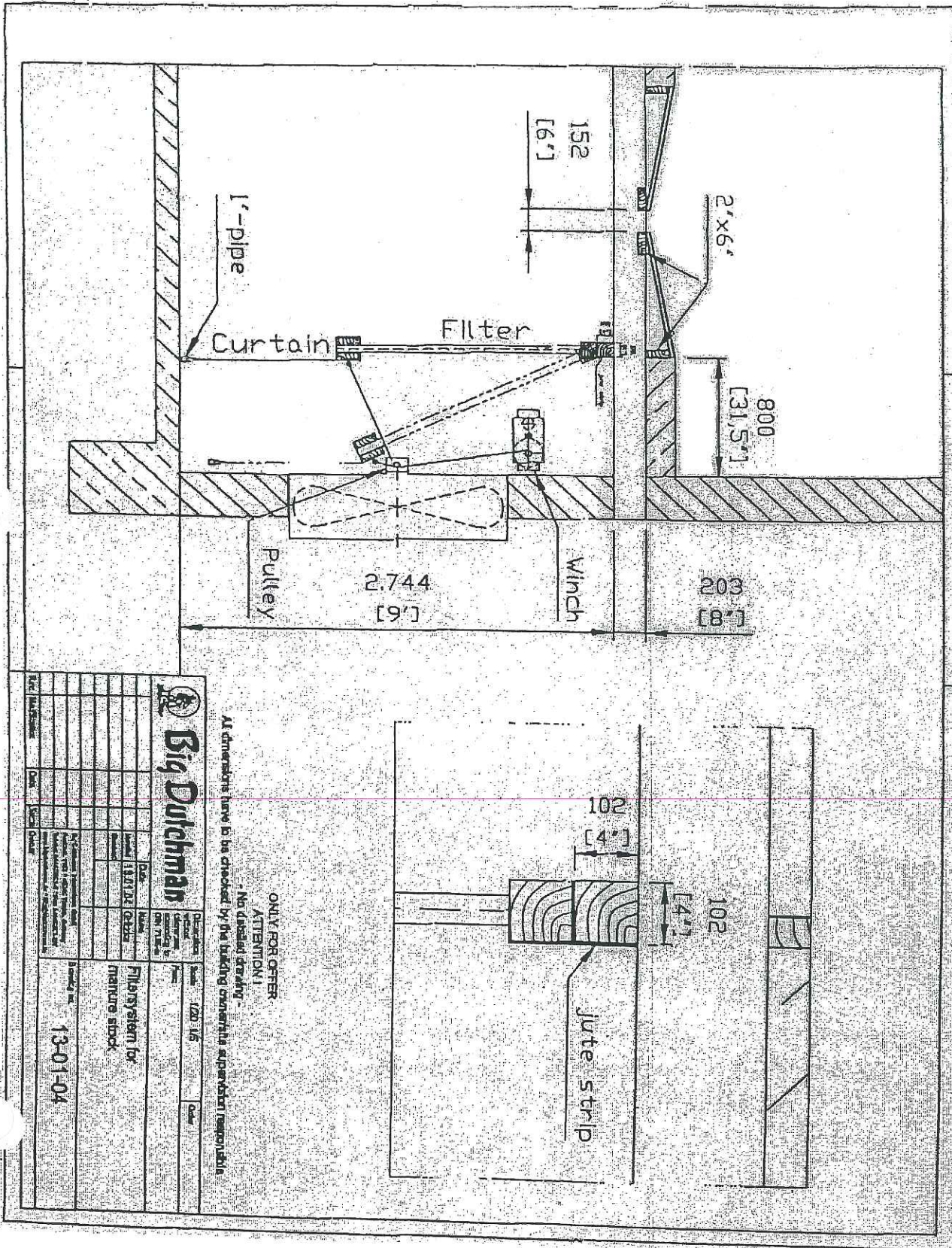


Exhibit 1 General Particulate Impaction System Design



2

Exhibit 2

General Quality Assurance Project Plan

Project Description

This sampling entails an approach to measure pollutant emissions directly at the source. It will use a dust sampling system to monitor the concentrations of PM and PM₁₀ in the exhaust fans and the air inlets of a large caged-hen laying house.

PM and PM₁₀ will be sampled using a vacuum pump, 10 critical orifices each and, for PM₁₀, 10 PM₁₀ preseparator/cassette filter holder assemblies. The samples will be weighed using standard protocol for gravimetric analysis.

In addition, concentrations of carbon dioxide (CO₂) will be measured using a 0-5,000 ppm photoacoustic infrared carbon dioxide analyzer. The accuracy of this analyzer will be ± 100 ppm. The measurement range will be set at 0-5,000 ppm. The measurement of CO₂ is intended to obtain data that will be useful to monitor the mass (gas) transportation and (spatial and temporal) distribution in the building, to study the indoor air quality and to validate the measurement of PM₁₀.

The airflow rates of selected ventilation fans will be estimated by using a portable fan test chamber. The building ventilation rate will be obtained by monitoring the operation of all the fans and the airflow rate of a single fan, since all the ventilation fans are identical. The PM emission rates will be calculated by multiplying the measured concentrations by the airflow rates.

Finally, concentrations of ammonia will be measured using a chemiluminescence ammonia analyzer or similar instrumentation. The ammonia analyzer's measurement range will be set at representative concentrations (ppm), depending on the levels in the building. It will have a lower detectable limit of 1 ppm. Its precision will be 2.0% or better of full scale and the 0 to 90% response time will be 120 s with 10 s averaging.

Quality Objectives and Criteria for Measurement Data

The overall data quality objective is to generate data of sufficient quality to satisfy the objectives of the project stated above. Data will undergo quality assurance review which will assess, among other things, representativeness, completeness, comparability, and accuracy and precision.

Data representativeness will be assured by the overall sampling design, which includes high frequency and multi-location sampling and a week-long measurement period.

Data completeness will be achieved by assuring that valid data obtained from the measurement system will be no less than 90 percent of the scheduled sampling.

Data comparability will be maintained by consistent use of the same analytical methods used in recent studies in confined swine facilities.

Accuracy and precision for the PM and PM₁₀ measurement will be assessed in accordance with the equipment manufacturer's instructions included with required equipment. The filter weighing balance must be calibrated at least annually.

Accuracy and precision for the carbon dioxide measurement will be assessed by challenging the measurement system with zero air and a known concentration of carbon dioxide (CO₂) span gas. Carbon dioxide concentration measurement will be performed in accordance with the equipments instruction manual.

Accuracy and precision of the NH₃ measurement will be assessed by challenging the measurement system with zero air, a known concentration of NH₃ span gas (dual-certified by NIST-traceable gravimetric formulation and analysis based on vendor reference standard), and a known concentration of NIST-traceable nitric oxide (NO) span gas. Ammonia concentration measurement will be performed in accordance with the instrument manufacturer's recommendations.

Failure to achieve any of the acceptance criteria will trigger an immediate examination of sampling and/or analytical practices in order to correct the problem before the next round of scheduled sampling.

Documents and Records

Field logs will be maintained and include, but not be limited to, site drawings, daily notes, monitoring notes, results of in-field quality control checks, and any deviations from this quality assurance project plan.

Field test documentation and electronic data storage will be maintained in accordance with the standard operating procedures.

Records resulting from this project will be retained for a period of not less than three years.

MEASUREMENT DATA ACQUISITION

Sampling Process Design (Experimental Design)

Measurements of ammonia and CO₂ will be conducted sequentially at multiple locations to obtain gas emission rates, and temporal and spatial variations of gas concentrations. A gas sampling system will be constructed to allow automatic sequential air sampling from three groups of sampling locations. Teflon tubes (1/4" ID) will be used to transport air from nine exhaust locations (Group 1 - four fans on the west side of the building and Group 2 - five fans on the east side of the building) and four air inlets (Group 3) in the ceiling. A filter will be installed at the opening head of each gas sampling line at the sampling location to remove particulate. The selected gas stream will pass through Teflon sampling manifolds.

A vacuum pump (P1) will pull air from the sampling locations to the concentration analyzers. The sample gas stream from each group will be measured continuously for 10 minutes before switching to another sampling group. The first nine minutes of gas concentration data will be ignored to allow the measurement system to equilibrate. The measurement of the three groups of sampling locations will need 30 minutes. Thus, 48 CO₂ measurements will be obtained daily for each group. These data with 30 minute time resolution will allow analyzing the temporal variations of the gas concentrations. Gas emission rates will be calculated using concentration differences between groups (Group 1 vs Group 3 and Group 2 vs. Group 3) combined with ventilation rate.

A second set of gas analyzers will be set up to focus on spatial variations of gas concentrations. The measurement will be divided into two periods. At the first period, it will be measuring each of the 12 sampling locations (excluding one fan in Group 2) measured by the first set of analyzers. The 12 locations will be measured sequentially. Measurement at each location will take 10 minutes and it will need two hours to measure all locations. Thus, 12 concentration readings will be obtained daily. The data will be used to study the concentration variations within each group of sampling locations to validate the selection of these locations.

At the second period, the second set of gas analyzers will be measuring only two locations to determine both spatial and temporal variations. Some of these locations will be at the floor to determine the portion of air pollutants produced by the birds on the second floor as compared to the manure stored on the first floor. The selection of the two locations will be determined upon the completion of the first measurement period and based on the data at hand at that time.

PM and PM₁₀ will be sampled once every day for 24 hours at eight exhaust fans, side by side with continuous emissions monitoring system (CEMS) sampling points, and one incoming air location using a nine-port manifold connected to a vacuum pump system. The sampling location will be 10 centimeters adjacent to the CEMS sampling location to ensure free flow of air around the sampling head. A fractionating inlet will be utilized at each point.

Twelve semiconductor sensors will be used to measure temperatures at the gas and dust sampling locations (eight exhaust fans and four air inlets). The sensors will be calibrated prior to use and recalibrated at the conclusion of the test. An electronic relative humidity/temperature probe will monitor outdoor relative humidity and air temperature. Another relative humidity/temperature probe will be used to monitor indoor relative humidity and an additional air temperature at the center of the manure pit. Building static pressure will be monitored at four locations representing east, west, north and south sides of the building.

The wall fans will be tested with a portable fan test chamber to determine their actual airflow rates at different static pressures. Their operation will be monitored with voltage-sensing relays.

Sample Handling and Custody

PM and PM₁₀ filter samples will be taken using 47-mm filter cassettes. The filters will be equilibrated at a set temperature ($20 \pm 1^\circ\text{C}$) and relative humidity ($50 \pm 5\%$) for at least 24 hours prior to pre-and post-weighing, and weighed using standard protocol for gravimetric analysis.

Samples will be labeled and logged in on standard field data sheets at the time of placing and collecting the samples. The samples will then be transferred directly to the laboratory for weighing or stored for later weighing. Information on the data sheets includes date, time of day, personnel, sampling location, airflow rate, sampling start time, sampling stop time, temperature, any unusual conditions or observations, weight of pre-sampling, weight of post-sampling, and PM concentration. All field data will be recorded and checked for completeness and accuracy before leaving the site. Laboratory data sheets will be prepared and signed as samples are processed. The samples remain in the custody of sampling personnel at all times precluding the need for chain of custody documentation.

All other measurement will be taken in-situ in the buildings and no sample custody will be involved.

Analytical Methods

Approved analytical methods will be used in all experiments. Analytical data will be generated in accordance with the standard operating procedures and instrument manufacturer's manuals.

The sampling team will undertake corrective actions for gas and particulate concentration measurement. Corrective action will be necessitated by any deviation from published procedure or instruction manual direction.

Quality Control

Quality assurance and quality control at all facilities includes the use of properly maintained and reliable instrumentation, approved analytical methodologies and standard operating procedures, external validation of data, well-trained analysts, electrical backups, audits, and documentation. When appropriate, published EPA analytical methodologies will be used. Logs will be maintained for each instrument.

Quality control procedures will include the following:

- Calibrations of ammonia and carbon dioxide analyzers will be conducted regularly.
- On-line results of all the continuous measurement variables will be displayed on a PC screen. Sampling personnel will check the on-line display daily by either remote or on-site access.
- Logged data files in the PC in the previous day will be checked the next business day to find and correct any problem with the system.
- Experienced analysts will run all equipment.
- Internal performance and system audits will be performed.

- A measurement of inlet clean air will be included as a field blank for gas concentration measurement.
- An uninterrupted power system will be used to prevent equipment damage in case of power failure.

Instrument/Equipment Calibration and Frequency

Gas concentration analyzers will be calibrated in accordance with the manufacturer's instruction manuals. Certifications for calibration gases will include two analyses at least one week apart. The certified calibration gases will consist of zero air and a representative upper limit concentration for ammonia gases as well as carbon dioxide in nitrogen. Calibrations of ammonia and carbon dioxide analyzers will be conducted weekly.

Gas airflows of the PM and PM₁₀ samplers will be calibrated using precision airflow calibrators (0.020-6 Lpm and 2-30 Lpm flow rates). Calibration frequency will be determined in accordance with the manufacturer's instructional manual.

Calibration records will be maintained in accordance with the applicable standard operating procedure or instrument manufacturer's operation manuals.

Inspection/Acceptance of Supplies and Consumables

All atmospheric gaseous measurement will be traceable to dual-analyzed and certified standards from a reputable supplier. No additional requirements are applicable.

Data Management

Instrumental data will be collected and stored in accordance with the applicable standard operating procedure or instrument manufacturer's operations manual. Raw data will be saved as tab delimited ASCII files.

All temperature and relative humidity data will be electronically stored and compiled in a manner that will facilitate computation of 30-minute and daily averages.

Sampling personnel will keep the following logs: daily notes including site drawings, deviations from QA, and other notations. The logs will contain measurement activities and monitoring notes. A third party witness will sign and date all log notes. All notes will be contained in a centralized notebook. All necessary records for additional monitoring instruments will also be kept.

A large portion of the data will also be maintained electronically in the form of spreadsheets. Electronic raw data and computer records will be backed-up weekly on a network drive (backed-up daily) with copies stored at the laboratory. In addition to computer storage, raw tables or graphs will be printed out and stored in a loose-leaf notebook in the laboratory.

Assessments and Response Actions

Sampling personnel will be responsible for evaluating the data and assessing the data in accordance with validation procedures. They will assess the data for their representativeness, completeness, comparability, and accuracy and precision as outlined in a previous section.

Sampling personnel will also be responsible for preparing the portions of a report concerning the results from their respective instrumentation. They will integrate the data and jointly prepare a draft measurement report for review.

Reports to be Submitted

The draft and final project reports will contain all valid monitoring data expressed as 30-minute and daily values. The report will incorporate graphical representations of the location of all measurements taken. The report will also contain the numerical and qualitative results of all quality control measures on all measurement systems and will compare them to the applicable acceptance criteria. In the event that data must be invalidated, the reason for data invalidation shall be identified with the resultant corrective action.

Review drafts and final reports will be distributed to, at least:

Kevin Vuilleumier	U.S. EPA, R5
Cary Secrest	U.S. EPA, HQ OECA
Isaac Robinson	OEPA, CDO
Don Waltermeyer	OEPA, NWDO

Data Review, Verification, and Validation

All data generated under this QAPP will be reviewed and validated by sampling personnel. Data quality assessment will be performed by sampling personnel.

Raw data review will be done within two business days after the data were recorded from measurement. Verification of the measurement data will be done during initial processing each week using appropriate software.

Validation and Verification Methods

Data will be validated and verified by comparison with instrumental performance parameters as identified in the applicable standard operating procedure or instrument operation manual. Data validation and verification will also be performed by checking the recorded test activity and change of the building environment. Data will be evaluated for compliance with stated objectives for representativeness, precision, and accuracy. However, the evaluation process used to find and correct an error may not be defined in this QAPP because not all possible errors and corrections can be anticipated.

Reconciliation with User Requirements

Any data not meeting the data quality objectives as outlined above will be flagged as invalid for comparison to screening level criteria.

Exhibit 3

Determination of Annual Emissions

This Exhibit provides a summary of the methodology proposed for determining annual emissions from the Mt. Victory Location and the Croton Location. The data obtained at the Mt. Victory Location will also be extrapolated to determine annual emissions from the Marseilles Location. The methodology provided below is only a representative summary. This summary may be modified based on any final proposal submitted under Attachment A. Any modifications are subject to EPA approval.

Emission data will be collected over a period of six months between August 1, 2004 and February 1, 2005 at two layer barns at the Mt. Victory Location, one with the Particulate Impaction System and/or any other approved PM control system and the enzyme additive system and one without any PM control system and without the enzyme additive system. Bird inventories should remain similar between the control (with Particulate Impaction System and/or any other approved PM control system and enzyme additive system) and uncontrolled (without any PM control system and without enzyme additive system) barns to minimize livestock-related variables. Manure pH, moisture, and any other relevant characteristics will be measured and evaluated for representativeness.

Emission data will also be collected over a period of six months between August 1, 2004 and February 1, 2005 at one layer barn at the Croton Location. This Croton Location barn will be fully converted to a belt battery manure handling system that is in place and operating as well as the new bird variety and feed as provided in the approved PM Plan for the Croton Location. Manure pH, moisture, and any other relevant characteristics will be measured and evaluated for representativeness.

Emission data will be collected in accordance with the secondary method set forth in Exhibit 2 and used to calculate daily average PM and ammonia emission rates. Daily average emission rates will be based on the sum of all emissions calculated for that day. Daily average temperature will be calculated by summing all temperatures for that day obtained by direct readings. Regression analysis (using standard statistical and regression analysis methodology) will then be performed on the daily average emission rates and daily average temperatures calculated above. This analysis will provide the basis for a regression model which shows a relationship between ambient temperature and emission rates for each pollutant. Using the

daily mean temperature determined from historical data recorded at Mansfield, Ohio, the sum of the daily emission rates will provide the annual emissions estimate.

With a sampling period between August 1, 2004 and February 1, 2005 the average monthly temperature of the six month sampling period may be near the expected average monthly temperature of a typical year. Some differences between the actual and historical temperatures are expected, and adjustments will be made using the temperature-emissions correlation.

Fan Curves will be calculated and used to determine airflow based on the length of time fans are operating on a per minute basis. Operation will be monitored through static pressure and recording of each fan operating that minute. Total ventilation for which the fan is capable will be determined using a portable test chamber unit, as set out in Attachment A. The PM and ammonia emission rates shall be calculated, as follows.

Air Flows_{fan-minute} = (fan operating time in percentage of 60-sec operation) X (fan airflow based on derated fan curve and measured static pressure)

PM (NH₃) ER_{minute} = (Average PM (NH₃) Concentration_{minute} lb/dscf) X (summed air flow_{fan-minute} dscf/minute of each fan)

PM (NH₃) ER_{daily} = Summation of PM (NH₃) ER_{minute}

PM (NH₃) ER_{monthly} = Average PM ER_{daily}

Average temperature_{daily} = summation of temperature_{minute}

PM (NH₃) ER_{daily} and average temperature_{daily} recorded at the measurement site will be incorporated in a regression model to extrapolate emissions based on the mean daily temperatures. The model will assume that emission rate is dependent on ambient temperature. A non-linear relationship between temperature and emission rate may exist, thus the sum of the mean daily temperature is preferred to maximize the temporal resolution of the regression model.

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**RHEINISCHE FRIEDRICH-WILHELMS-
UNIVERSITÄT BONN**
Landwirtschaftliche Fakultät
Institut für Landtechnik



Institut für agriculture engineering, Nussallee 5, D - 53115 Bonn

Big Dutchman International GmbH

Herr Armin Schwarz
Postfach 1163

D- 49360 Vechta

Bonn, den 16. Januar 2004
Felix Schier
Tel: 0228 / 73 - 2598; Fax: - 2596
Email: fschier@uni-bonn.de

Reference: Dust measurement

Dear Ladies und Gentleman,

on October the 15th 2003 the dust measurements have been performed at the Broilerhouse of the farmer Ludger Thomas, Wiesen Str. 50, 49757 Werlte, Germany. During these point measurements on the 34th day of the mast period, the dust concentration of the raw- and clean gas was determined. The total dust loading in the raw gas amounted to averaged 41308.4 µg/m³ and 10598.8 µg/m³ in the clean gas.

The measurements were averaged by two values in the raw gas and two in the clean gas. Each value was measured in a period of 15 minutes. The resulting degree of efficiency concerning dust amounts to 74.34%. The concentration of dust has been measured using an Aerosol Spectrometer from Grimm Aerosol Technik GmbH und Co. KG Ainring-Deutschland, Model 1.108.

The raw gas was sampled between the animal area and the dust collector. The clean gas samples were taken behind the dust collector directly behind the fans outside of the broilerhouse.

Best regards

Dipl. Ing. agr. F. Schier

Mail: Institut für agriculture engineering, Nussallee 5, D - 53115 Bonn
Internet: <http://www.Landtechnik.Uni-Bonn.de>

	>0.23	Efficiency	>0.3	Efficiency	>0.4	Efficiency	>0.5	Efficiency	>0.65	Efficiency	>0.8	Efficiency	>0.9	Efficiency	>1.0	ncy
side 1	44373.54		44687.23		44659.04		41652.83		41642.74		41625.08		44568.63		81.18	
side 1	8431.07	81.13	8427.59	81.13	8422.54	81.14	8420.09	81.14	8418.31	81.15	8416.17	81.15	8409.89	81.15	8397.58	81.18
average dust side	41308.37		41302.7838		41285.4774		41285.8316		41283.8398		41280.47		41283.9736		41208.4364	
side 2	37843.20	84.26	37836.36	84.27	37831.91	84.27	37827.06	84.28	37823.18	84.28	37818.20	84.28	37802.89	84.29	37850.24	84.32
side 2	13561.33		13557.00		13551.74		13548.77		13546.59		13543.77		13538.43		13505.29	
average clean side	10958.60		10952.29		10947.14		10944.43		10942.49		10939.97		10937.68		10946.42	

	>2.0	Efficiency	>3.0	Efficiency	>4.0	Efficiency	>5.0	Efficiency	>7.5	Efficiency	>10.0	Efficiency	>16.0	Efficiency	>20.0	Efficiency
side 1	44138.80		43737.06		43283.43		40069.63		34809.84		29283.73		17205.30		9812.39	
side 1	8346.94	81.22	8077.01	81.23	7941.69	82.16	6838.80	82.53	5502.73	84.19	4483.37	84.69	2584.94	84.98	1557.89	83.79
average dust side	41096.6286		40422.3657		39039.7864		38057.2721		31038.7129		26878.0936		15716.8071		8730.3643	
side 2	37741.88		37108.07		36798.14		33945.01		29263.79		24469.48		14227.31		7849.34	
side 2	12447.17	64.37	12407.69	64.73	12369.46	65.44	11377.46	66.38	9375.14	67.08	7852.96	68.72	4352.26	69.55	2464.47	68.60
average clean side	10887.96		10582.35		9855.57		9108.14		7438.94		6097.94		3458.60		2011.18	

	Inhalable	Thoracic	Average	PM-10	PM-2.5	PM-1.0
side 1	44673.54	20375.72	3997.8	19440.43	427.3	62.41
side 2	37940.2	17849.43	3639.3	8060.83	378.21	53.63
average dust side	41308.37	19012.575	3768.6	9750.63	403.255	57.97
side 1	7583.55	4235.62	1220.05	2219.22	157.23	26.38
side 2	13813.99	7152.3	1778.74	3774.87	212.63	32.93
average clean side	10548.77	5690.96	1498.385	2977.045	184.93	29.655
cleracy	74.3	70.1	60.2	69.5	54.1	43.8

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1232171.1

Fig 1

Figure No. 1 Croton Facilities-PM Controls

Brief Summary of Particulate Matter Control
Requirements under Attachment A of Consent Decree

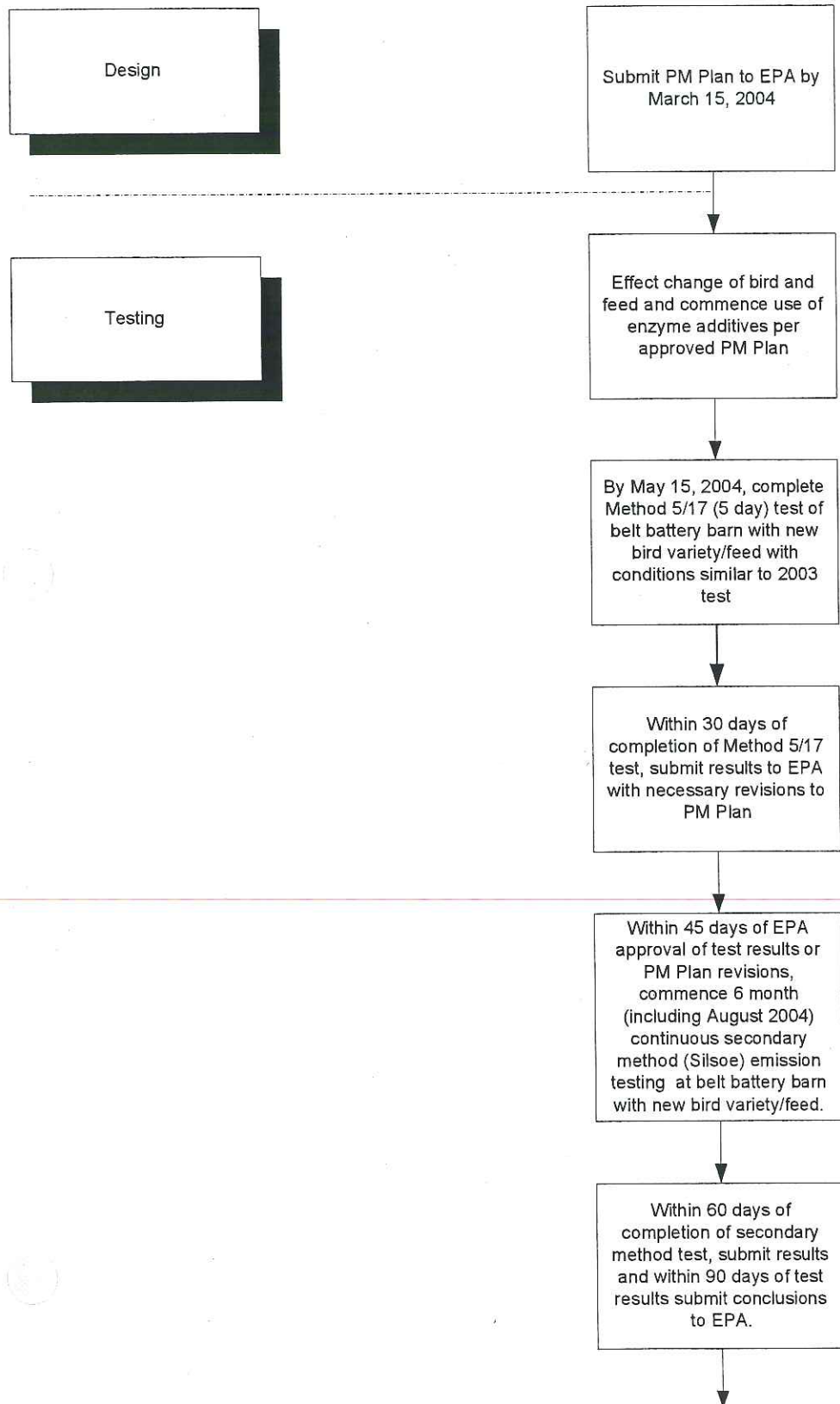


Figure No. 1
Croton Facilities-PM Controls

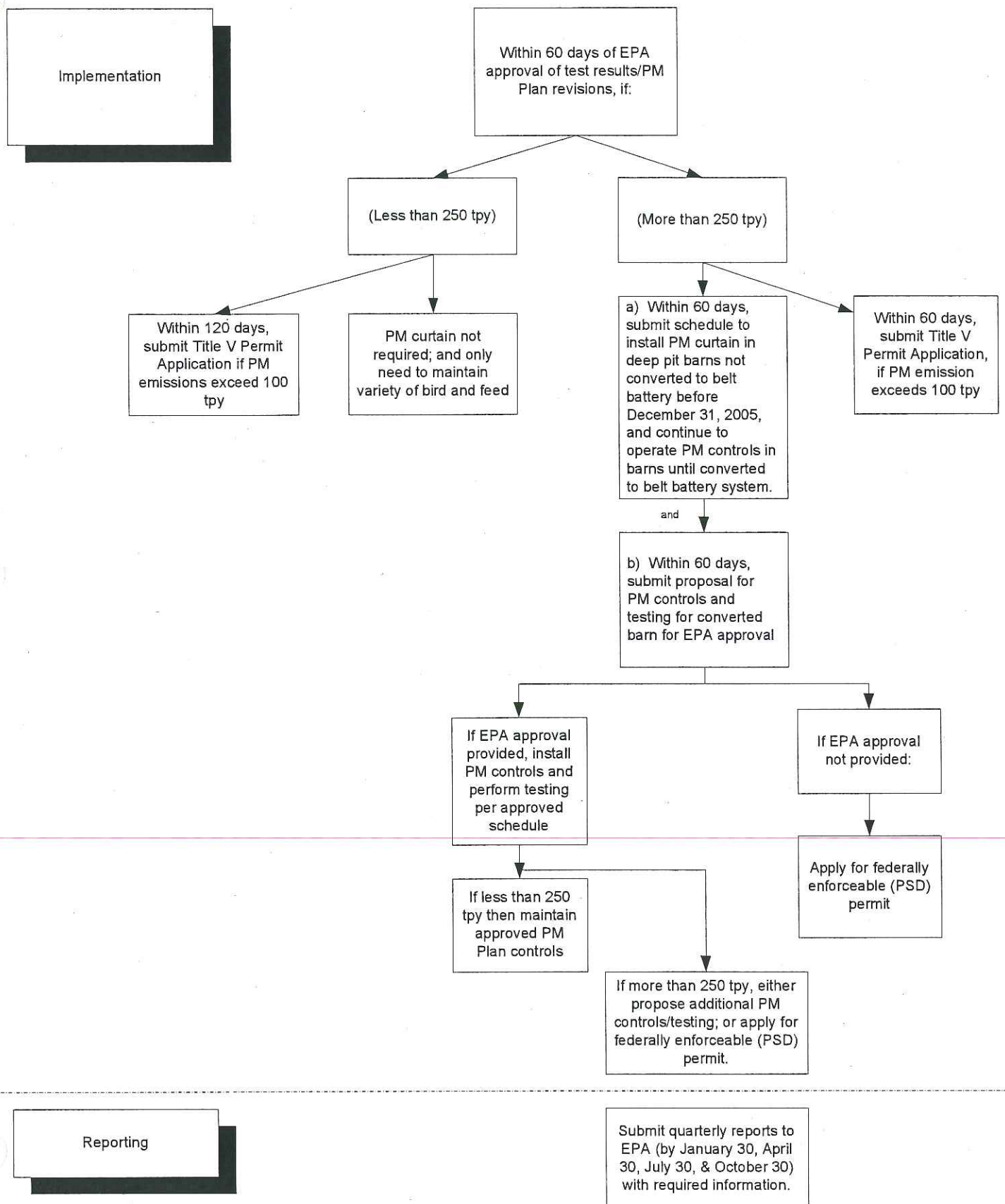


fig 3

Figure No. 3 Northern Facilities-PM Controls (Mt. Victory/Marseilles)

Brief Summary of Particulate Matter Control
Requirements under Attachment A of Consent Decree

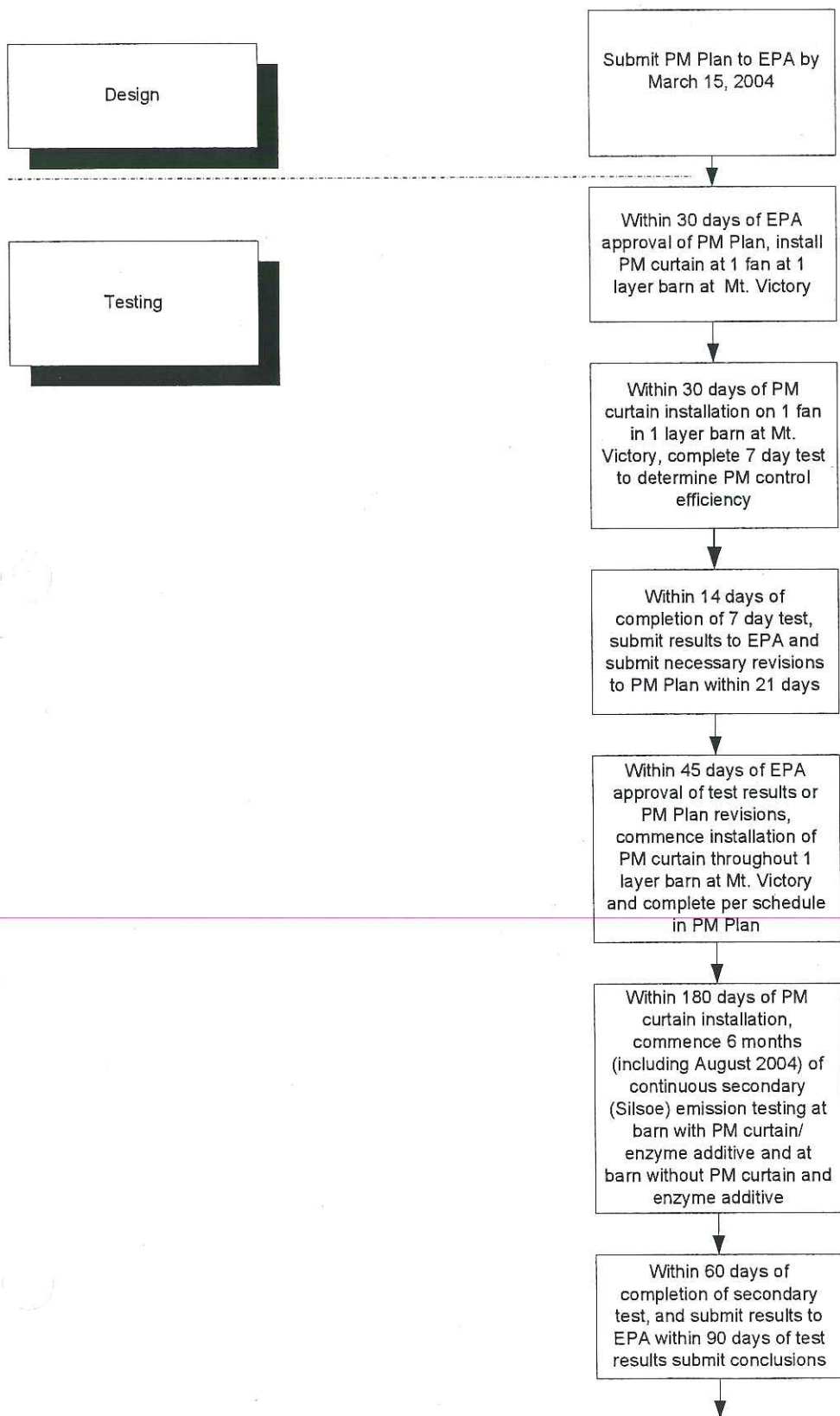
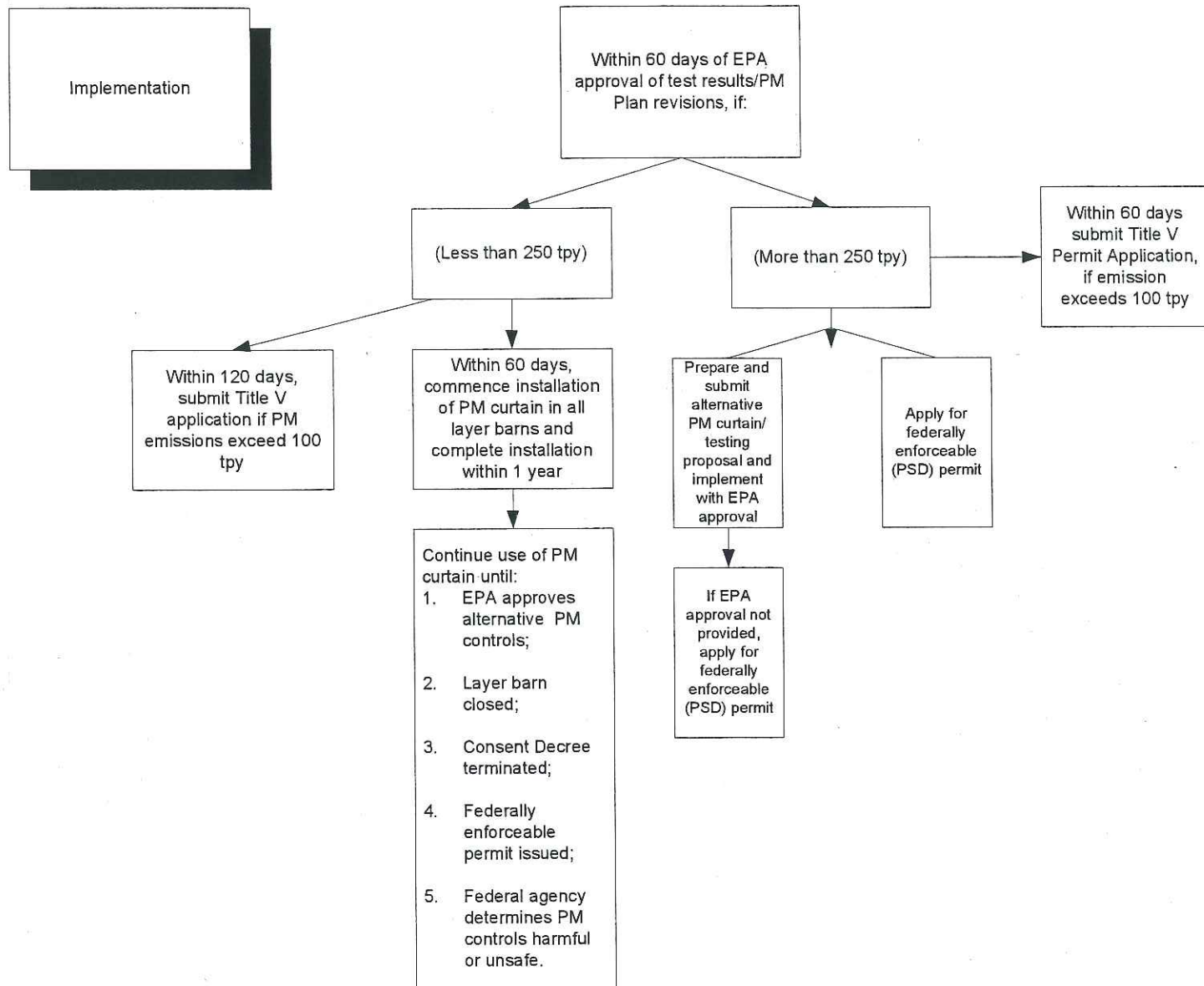


Figure No. 3 Northern Facilities-PM Controls (Mt. Victory/Marseilles)



Reporting

Submit quarterly reports to EPA (by January 30, April 30, July 30, & October 30) with required information.

PROPOSED

**Ammonia Emissions Control Design
and Implementation Plan**

for

**Ohio Fresh Eggs, LLC's
Croton, Marseilles, and Mt. Victory, Ohio Facilities**

March 2004

Submitted by:

Ohio Fresh Eggs, LLC
11212 Croton Road
Croton, Ohio 43013
740/893-7200 (telephone)
740/893-7204 (fax)

**ARD
EDMS**

Ohio Fresh Eggs, LLC

March 15, 2004

RECEIVED

MAR 16 2004

AIR ENFORCEMENT BRANCH,
U.S. EPA, REGION 5

VIA FEDERAL EXPRESS

TO: DISTRIBUTION LIST

Re: DOJ No. 90-11-2-06089, U.S. v. Buckeye Egg Farm, L.P., et al.,
United States District Court, Northern District of Ohio, Western Division,
Civil Action No. 3:03CV7681

Dear Ladies and Gentlemen:

As required in the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., Ohio Fresh Eggs, LLC is submitting a Proposed PM Control Design and Implementation Plan and a Proposed Ammonia Emissions Control Design and Implementation Plan for its Ohio facilities at Croton, Mt. Victory, and Marseilles.

Should you have any questions or need additional information, please contact me.

Very truly yours,

OHIO FRESH EGGS, LLC

By: Donald C. Hershey
Donald C. Hershey

Enclosures

March 15, 2004

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Washington, D.C.

Mr. Christopher Jones, Director
Ohio Environmental Protection Agency
Lazarus Government Center
122 South Front Street
Columbus, Ohio 53215

Mr. Fred Dailey, Director
State of Ohio Department of Agriculture
8995 East Main Street
Reynoldsburg, Ohio 43068

PROPOSED

**Ammonia Emissions Control Design
and Implementation Plan**

for

**Ohio Fresh Eggs, LLC's
Croton, Marseilles, and Mt. Victory, Ohio Facilities**

March 2004

Submitted by:

Ohio Fresh Eggs, LLC
11212 Croton Road
Croton, Ohio 43013
740/893-7200 (telephone)
740/893-7204 (fax)

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SECTION I. INTRODUCTION

Ohio Fresh Eggs, LLC recently acquired commercial egg-laying facilities from Buckeye Egg Farm, L.P. that are located in Croton, Licking County, Ohio ("Croton Facilities"), Harpster, Wyandot County, Ohio ("Marseilles Facilities"), LaRue, Hardin County, Ohio ("Mt. Victory Facilities"), which Facilities are subject to the requirements of the Consent Decree in United States v. Buckeye Egg Farm, L.P., et al., United States District Court, Northern District of Ohio, Western Division, Civil Action No. 3:03CV7681. Attachment A of the Consent Decree requires that certain emission controls be installed at these Facilities if, based on testing, such controls are determined to be effective at reducing particulate matter and ammonia emissions from these Facilities. A copy of the Consent Decree, and the associated Attachment A and Exhibits 1-3 are attached for reference as Exhibit 1.

One of the emissions to be addressed under Attachment A of this Consent Decree is the reduction of ammonia (NH₃) generated from the deep-pit layer barns at these Facilities. The layer barns at the Croton Facilities are under a defined schedule to be converted from "deep-pit" manure layer barns to barns with "belt battery" manure handling systems. The belt battery layer barns emit lower concentrations of ammonia than the deep-pit layer barns since there is less manure in these types of barns and the manure has less moisture. There are no plans, nor requirements, to convert the deep-pit layer barns at the Mt. Victory and Marseilles Facilities to belt battery manure management systems. Ohio Fresh Eggs proposes to test the effectiveness of a manure enzyme additive to reduce ammonia emissions from the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

This Proposed Ammonia Emissions Control Design and Implementation Plan sets forth in detail how Ohio Fresh Eggs intends to test and implement the use of an enzyme additive to reduce ammonia emissions from the manure in the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

SECTION II. BACKGROUND

Generally, depending on the barn size, each deep-pit layer barn at the Croton, Mt. Victory and Marseilles Facilities, when at full capacity, houses either 68,885 or 97,627, 163,859, or 166,780 layer chickens, respectively. The layers excrete manure, which is accumulated in concrete pits beneath the layer cages in the deep-pit layer barns. The manure in the pits within the deep-pit layer barns is removed semi-annually, or during a change over in layers. In contrast, the belt battery layer barns each house approximately 102,098 or 140,000 birds, depending on the barn size and configuration, and manure is removed via covered conveyor belts on a daily basis for storage in separate manure storage buildings. Forced air is directed on the manure conveyer belts to help reduce the moisture content of the manure prior to storage in the manure storage buildings, which are emptied at least annually. The number of layers in the houses will change as a result of the UEP Guidelines.

SECTION III. OVERVIEW

Attachment A to the Consent Decree requires the submission of a Proposed Ammonia Emissions Control Design and Implementation Plan to the United States Environmental

Protection Agency for review and approval by March 15, 2004. Ohio Fresh Eggs intends to test the effectiveness of a commercially available enzyme additive to reduce ammonia emissions by 50% or more in its deep-pit layer barns. Initially, the effectiveness of the enzyme additive will be tested in a bench-scale study. If the test results show the additive is effective at reducing ammonia emissions from the layer barns by 50% or more, Ohio Fresh Eggs will test the effectiveness of the enzyme additive, on a trial basis, in one fully housed, deep-pit layer barn at the Mt. Victory Facilities. If test results demonstrate that the enzyme additive reduces ammonia levels by 50% or more, the enzyme additive will be used on an ongoing basis in all deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities in accordance with the requirements of Attachment A. Attachment A to the Consent Decree also requires each layer barn at the Croton Facilities that is not converted to belt battery manure handling systems by December 31, 2004, to be subject to the ammonia testing and control requirements until such barns are converted to belt battery manure handling systems. Attached Figures Nos. 2 and 4 summarize the ammonia emission control requirements under Attachment A of the Consent Decree.

SECTION IV. AMMONIA CONTROLS

A. Product or System Design

1. *Enzyme Additive Product or System*

Ohio Fresh Eggs intends to use the Eco-Cure Enzyme Product, which is an enzyme activator, to reduce ammonia emissions from the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities. Eco-Cure is expected to substantially reduce ammonia emissions from the deep-pit layer barns. The manufacturer of this enzyme activator, Eco-Cure, Inc., claims that this product is highly effective in reducing ammonia emissions.

(a) Description of Product

Eco-Cure Enzyme Product is an organic enzyme activator that acts to immobilize ammonia (NH₃) to organic nitrogen (N). This enzyme activator is manufactured by Eco-Cure, Inc. The Material Safety Data Sheet for the Eco-Cure Enzyme Product is attached as Exhibit 2. The enzyme activator works by encouraging aerobic bacterial growth (as opposed to anerobic bacterial activity which promotes the production of ammonia) that consumes ammonia and other organic constituents in the manure.

(b) Explanation of Product Application

Eco-Cure is sold in solid form in 5 gallon containers that each weigh 22 pounds. One pound of the Eco-Cure concentrate is mixed with 32 gallons of dechlorinated water, or water with low chlorine levels. Eco-Cure specifies that the Enzyme Product is to be applied weekly. A copy of the manufacturer's instructions for the use of Eco-Cure is attached as Exhibit 3.

Subject to successful bench scale test results, within 60 days of EPA approval, Ohio Fresh Eggs intends to apply Eco-Cure manually, through the use of portable sprayers, in one (1) deep-pit layer barn at the Mt. Victory Facilities for a period of six (6) months to coincide with the Silsoe Secondary Test Method that will be performed at that barn and a separate control barn, from August 1, 2004 to January 31, 2005. Should the Secondary Test Method results confirm

that use of the Eco-Cure reduces ammonia emissions in the deep-pit layer barns by 50% or more, within 60 days of EPA approval, the use of Eco-Cure will be implemented at all deep-pit layer barns in accordance with the requirements of Attachment A of the Consent Decree. In the event the Eco-Cure product is effective at reducing ammonia emissions, Ohio Fresh Eggs would likely evaluate the feasibility of installing and operating a fixed, automatic sprayer system to apply the Eco-Cure in deep-pit layer barns in lieu of the use of the portable sprayers. Written procedures and training will be provided to the employees that mix and apply the Eco-Cure product to ensure consistency in the concentration of Eco-Cure that is applied in the layer barns.

(c) Summary of Product Costs

The cost of Eco-Cure is \$60 per pound or \$1,320, plus shipping, per 5 gallon container. The estimated costs to use Eco-Cure in a deep-pit layer barn is \$33 per week or \$1,700 per year. The estimated annual cost for the equipment to apply the Eco-Cure is \$500. The estimated annual labor cost to apply Eco-Cure is \$1,500.

The manufacturer claims that the use of Eco-Cure will reduce pesticide use since the treated manure is a less attractive medium for flies. The estimated cost savings associated with the use of Eco-Cure, due to the potential reduced use of pesticides, is unknown. Because Ohio Fresh Eggs very recently acquired ownership of the Facilities, it has not had sufficient time to track pesticide use or costs at these Facilities and the estimated pesticide cost savings may be speculative.

(d) Description of Expected Emissions Reduction

Only very limited, mostly anecdotal, information is available from the manufacturer on the effectiveness of Eco-Cure's enzyme activator in reducing ammonia emissions. The information is attached for reference as Exhibit 4. No analytical data from the manufacturer appears to be available which shows the enzyme activator either will or will not reduce ammonia emissions by 50% or more. However, limited analytical information concerning the use of the enzyme activator does indicate that Eco-Cure may be effective in reducing ammonia odors and concentration. Copies of this information is attached as Exhibit 5. The manufacturer claims that 85 egg growers in the United States use Eco-Cure to reduce ammonia emissions, and that Eco-Cure users include Rose Acre Farms, Sparboe, ISE Newberry Inc., Valley Fresh Farms, and Tyson Foods. The manufacturer did not have or was not willing to provide any additional documents about the effectiveness of the use of Eco-Cure at these commercial facilities.

(e) Contract, Purchase and Implementation Schedule

The cost of the Eco-Cure enzyme activator is \$60 per pound and is only available through Eco-Cure, Inc. According to the manufacturer, Eco-Cure is readily available for commercial use, subject to purchase order approval and shipping time. Ohio Fresh Eggs will order a sufficient quantity of Eco-Cure for the bench scale study upon approval of the Ammonia Control Plan. Eco-Cure is expected to be delivered to Ohio Fresh Eggs within two (2) weeks of ordering. Sprayer equipment to apply the enzyme additive is readily available and will be purchased by Ohio Fresh Eggs. Ohio Fresh Eggs expects that it may need 60 to 90 days to adjust the use of Eco-Cure to maximize its effectiveness.

(f) Reporting and Recordkeeping

As required by Attachment A of the Consent Decree, Ohio Fresh Eggs will timely submit the Eco-Cure test results from the bench scale and Secondary Test Method to EPA for review and approval. During the Secondary Test Method period, Ohio Fresh Eggs will maintain an Enzyme Activator Log to record the frequency and quantity of application of the enzyme activator. A sample Enzyme Activator Application Log is attached as Exhibit 6. These Logs will be reviewed on a weekly basis to ensure the enzyme additive is timely and properly applied in the deep-pit layer barns. These Logs will be summarized in the quarterly reports that are submitted to EPA. The quarterly reports will summarize the status of the Eco-Cure testing and implementation. Should the Secondary Test Method results confirm the effectiveness of the enzyme activator, and EPA approve facility-wide application, the Enzyme Activator Application Log will be maintained to monitor enzyme activator usage in the deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

(g) Description of Expected Emissions or Wastes

According to Eco-Cure's manufacturer, the use of the enzyme activator substantially reduces the emissions of ammonia and hydrogen sulfide from the manure, and the only anticipated by-products or wastes generated from the use of Eco-Cure are carbon dioxide and water. It is possible that since the enzyme activator accelerates microbiological activity, which reduces the organic matter in the manure, that the use of Eco-Cure could concentrate certain nutrients in the remaining manure, such as nitrogen. Ohio Fresh Eggs will test the nutrient content in the manure prior to disposal or sale to determine if the Manure Management Plans for the Facilities need to be revised.

B. Testing

Ohio Fresh Eggs intends to test the effectiveness of the Eco-Cure enzyme activator in accordance with the requirements of Attachment A of the Consent Decree. The following testing protocols are intended to be used.

1. *Bench Scale Test Protocol*

Preliminary Test of Enzyme

~~Bench scale testing of the enzyme activator product will be conducted by Purdue University consistent with the Quality Assurance Project Plan as set forth in Exhibit 2 to Attachment A of the Consent Decree and within the time frames set forth in Attachment A to the Consent Decree.~~

Currently, the plans are to test the enzyme activator product using the Purdue Manure Reaction Laboratory. Laying hen manure collected from the Ohio Fresh Eggs' facilities will be added to eight (8) vertical cylindrical reactors at regular intervals during a 45-day trial. The product will be applied per the manufacturer's instructions to four randomly selected reactors. The reactors will be held at 20°C and ventilated with 7 L/min (0.25 cfm) of fresh air. Ten inches of manure will be added to each column on day zero. One-half inch of additional manure (1.4 L) will be added to each column daily. The columns will be loaded to a maximum level of thirty-

two (32) inches throughout the test to allow a minimum of sixteen (16) inches of headspace. Ammonia and carbon dioxide emission from each reactor will be measured automatically at least six times daily. Initial and final manure characteristics will be analyzed. Test results will be submitted as required under Attachment A to the Consent Decree.

2. *Secondary Test Method Protocol*

Secondary Method tests of ammonia emissions will be conducted by Purdue University consistent with the Quality Assurance Project Plan as set forth in Exhibit 2 to Attachment A of the Consent Decree. Subject to EPA's approval of the bench scale tests on the effectiveness of the enzyme activator, for purposes of preparing for the Secondary Test Method, Ohio Fresh Eggs intends to apply the enzyme additive, in accordance with the requirements in Attachment A of the Consent Decree, in layer barn No. 1, at the Mt. Victory Facilities, which is a deep-pit barn. Layer barn No. 2 at the Mt. Victory Facilities, which is a deep-pit barn, will be the control barn during the Secondary Method Test. No enzyme activator product will be used in this barn during the Secondary Method Test period. Both test barns at the Mt. Victory Facilities are of comparable age, design, and chicken population. Ohio Fresh Eggs intends to commence application of the enzyme activator in one of the Mt. Victory test barns prior to commencement of the Secondary Method Test in order to ensure optimal performance of the enzyme activator during the test.

The enzyme activator will be manually applied in accordance with the manufacturer's instructions and guidelines, on a weekly basis, in the barn where the effectiveness of the enzyme activator is being tested throughout the 6-month test period. The weekly dosage of approximately three (3) ounces will be applied in about eight (8) gallons of water.

3. *Test Parameters*

Ammonia Concentration

Ammonia will be measured in real time with a chemiluminescence (CL)-based NH_3 analyzer (Model 17C, Thermal Environmental Instruments (TEI), Franklin, MA), which is a combination NH_3 converter and a NO_x analyzer that is typically used for ambient monitoring but has a range capable of measuring typical concentrations inside animal buildings. Sample air is drawn at a flow rate of 0.6 L/min from the converter into the NH_3 analyzer through a particulate filter, a glass capillary, and a solenoid valve. The solenoid valve routes the sample either directly into the reaction chamber (NO mode) or through the converter and the reaction chamber (NO_x mode). NH_3 concentration is calculated based on the difference between these readings. The 0 to 90% response time is 120 s with 10 s averaging. Besides having an appropriate range for source measurements, the CL method is known for its stability, reliability, and high precision (0.5% of full scale). The full scale will be 1-100 ppm, depending on maximum expected levels. If NO and NO_2 measurements are negligible, the analyzer is operated in the total N mode to decrease response time and costs of NH_3 scrubbers (Heber et al., 2002a).

A photoacoustic infrared (PIR) ammonia monitor (1,000 ppm) (Mine Safety Appliances, Pittsburgh, PA) will be collocated with the CL method. Each ammonia analyzer will be

calibrated at least two times per week using standard gases. The standard gases will first be checked using an FTIR gas spectrometer at Purdue University to verify their accuracy.

Carbon Dioxide Concentration

Concentrations of CO₂ will be measured using a 0-5,000-ppm photoacoustic infrared-based CO₂ analyzer. The sensor utilizes dual frequency photoacoustic infrared absorption and is corrected for water vapor content. The guaranteed precision of this analyzer is ± 100 ppm of full scale and the sample flow rate is 1.0 L/min. To prevent drifts during calibration with dry calibration gases, the certified span CO₂ gases will be prepared with 2.5% CH₄.

Environmental Conditions

Ambient temperature will be logged for the purpose of calculating the mean daily temperature for analysis of ambient temperature effects on emission rates. At least eight (8) thermocouples will be used to sense temperatures in each building. The sensors will be calibrated prior to, and following each monitoring period using a constant-temperature bath. An electronic RH/temp transmitter (Model HMW61, Vaisala, Woburn, MA) housed in a NEMA 4 enclosure will monitor temperature and relative humidity at a representative exhaust location in each building. This RH/temp transmitter uses a HUMICAP sensor unit with $\pm 2\%$ accuracy between 0 and 90% RH and $\pm 3\%$ accuracy between 90 and 100% RH. Building static pressure will be monitored continuously at the center of the buildings across each sidewall using differential pressure transmitters (Model 267, Setra, Boxborough, MA) with an accuracy of $\pm 0.25\%$. Zero calibrations of the pressure sensors will be conducted by shunting the sensor inputs. Standard static pressure taps will be constructed to minimize effects of air movement. Wind speed and direction will be measured with a cup anemometer. The weather station will also measure solar radiation and temperature and humidity.

Ventilation Rate Measurements

One of the most difficult and yet most important aspects of determining emission rates in livestock and poultry facilities is the determination of ventilation rates. Building ventilation rates are a function of animal type, number and weight, and outdoor air temperature and can vary considerably throughout the day and seasons.

Actual fan performances are typically 5 to 20% less than published fan curves due to dust buildup, belt wear, and shutter degradation and emissions are overestimated unless fan deratings are known. Therefore, one fan of each model among the three buildings will be tested dirty in the fan test facility at the University of Illinois to determine the actual (derated) fan performance curves, to calibrate a FANS (fan assessment numeration system) analyzer ($< 2\%$ accuracy), and to calibrate small vane anemometers (SVAs). The calibrated FANS will then be used to spot measure airflow of all other fans in the barns. In this way, the FANS will serve as a field-based reference measurement technique. Additionally, an SVA will be installed at representative locations in ten fans per building to monitor airflow rate continuously. The SVAs will be calibrated in the field with the FANS analyzer. The building ventilation rates will be determined by monitoring the operation of all fans (using dry contacts on relays or vibration sensors) and the building static pressure and determining the fan airflow from the actual fan performance curves.

Manure Analysis

The manure in each layer barn will be sampled monthly to determine pH and moisture content, which are the two major factors affecting ammonia emissions. Twenty-five (25) surface samples will be collected from randomly selected locations in each building. Each sample will be put on ice and delivered to a manure analysis laboratory for analysis of pH and moisture content.

Quality Assurance/Quality Control

The project will have in place documented quality assurance/quality control (QA/QC) processes before data is collected. The QA/QC procedures will be based on EPA guidelines and implemented by each laboratory and during each sampling and measurement activity. The following is an outline about the QA/QC procedures:

General - Each laboratory will follow all protocols for this project and will utilize EPA approved standards, whenever they are available. Data will be analyzed using custom software (CAPECAB "Computations of Air Pollutant Emissions from Confined Animal Buildings) developed by the RSLs Group of Companies (Calgary, Alberta). Quality assurance and quality control at each mobile laboratory will include the use of properly maintained and reliable instrumentation, ready supply of spare parts, approved analytical methodologies and standard operation procedures, external validation of data, well-trained analysts, field blanks, electrical backups, audits, and documentation. Logs will be maintained for each instrument. A detailed QA/QC plan, based on EPA guidelines, will be provided upon request.

Sampling - Chain of custody documentation will be used for samples, e.g. PM, etc., that are collected and taken off-site. Wetted materials used for continuous gas sampling will be Teflon, stainless steel or glass. Gas airflows will be calibrated using precision airflow calibrators. Logged data files in the PC for the previous day will be checked the next business day to find and correct problems.

Calibrations - Certifications for calibration gases will include two NIST-traceable analyses at least one week apart. Calibrations of gas analyzers will be conducted at least twice a week using a programmable gas diluter. Certified calibration gases will consist of 9,000-ppm CO₂ in N₂, zero air, 180-ppm NO in N₂, and 180-ppm NH₃ in air.

Analytical Methods - Approved analytical methods will be used in all experiments. All analytical equipment will be properly maintained, tested regularly to ensure they are functioning properly, external validation of data will be done, and trained analysts will run all equipment. On-line results of all the continuous measurement variables will be displayed on a PC screen. Lab personnel will check the on-line display at least twice daily by either remote or on-site access. All electronic instrumentation will be protected by uninterruptible power systems.

Data Reduction and Reporting - On-screen data will be viewed on-line and downloaded regularly. Initial processing of measurement data will be done each week using CAPECAB. In addition to computer storage, raw tables or graphs will be printed out and stored in a loose-leaf notebook in the laboratory. Final data processing will occur following each test.

Gas calibration procedures will be maintained by redundant verification of calibration gases, frequent calibration checks, increased number of span concentrations during calibration, and by use of programmable gas dilution. Gas sampling lines in cold areas will also be heated to prevent condensation.

Data Analysis, Assessment, and Interpretation

The layer barn emission rates will be determined by multiplying concentration data (mass/volume) by barn ventilation rate (volume/time). Since the emission data will span roughly six months, they will reveal minimums and maximums as well as trends that may be related to season, animal age, climate, and management.

As data is collected in real-time by the data acquisition computer, it will be converted to binary format and transferred automatically to a server at Purdue University. The software program CAPECAB allows immediate access to the data to visualize and inspect the data. CAPECAB also facilitates data validation via interactive and automatic flagging. It performs interpolations between concentration measurements, which, coupled with continuous airflow measurements, allows the creation of an emission value every minute. From this 60-s database, the program creates averages over user-specified intervals (5-min, 60-min, 24-h, weekly, etc.). Thus, the following day, CAPECAB can create a report of hourly averages for the previous day. By Friday of each week, data will be summarized for the previous week.

C. Implementation

Subject to EPA's approval of the test results from the bench scale study, and subsequently, if approved, the test results from the Secondary Test Method, Ohio Fresh Eggs will commence the use of the enzyme activator product, in accordance with the timetable and terms set forth in Attachment A of the Consent Decree, in all operational deep-pit layer barns at the Croton, Mt. Victory and Marseilles Facilities.

SECTION V. CONCLUSION

Ohio Fresh Eggs proposes to test the effectiveness of the use of a commercially available enzyme activator, Eco-Cure, to reduce ammonia emissions from its deep-pit layer barns at its Croton, Mt. Victory and Marseilles Facilities. Should bench scale tests and Secondary Test Method confirm that the use of the enzyme activator is effective in reducing ammonia emission by 50% or more, the enzyme activator will be used on an ongoing basis at all deep-pit layer barns in accordance with the requirements of Attachment A of the Consent Decree.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO, WESTERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

vs.

BUCKEYE EGG FARM, L.P.,
CROTON FARM, LLC, AND
ANTON POHLMANN,

Defendants.

CIVIL ACTION NO.
3:03 CV 7681

(Hon. David A. Katz)

CONSENT DECREE

Plaintiff United States of America, on behalf of the United States Environmental Protection Agency ("EPA"), has filed a Complaint and an Amended Complaint in this action, alleging that Defendants violated Section(s) 113, 114, 165, 502 and 503 of the Clean Air Act ("CAA"), 42 U.S.C. §§ 7413, 7414, 7475, 7661a, & 7661b, including violations of 40 C.F.R. Part 52, Subpart A, Section 52.21, and the Ohio State Implementation Plan (Ohio SIP), codified at 40 C.F.R. Part 52, Subpart KK (40 C.F.R. §§ 52.1870-52.1919). The Amended Complaint alleges that these violations occurred and are occurring at the Defendants' commercial egg production Locations in Ohio, specifically, (i) the Croton Location, located in Licking County, Croton, Ohio, (ii) the Marseilles Location, located in Wyandot County, Harpster, Ohio, and (iii) the Mt. Victory Location, located in Hardin County, LaRue, Ohio (collectively, "the Locations").

Defendant Buckeye Egg Farm, L.P. ("Buckeye") is a limited partnership organized under the laws of Delaware, and is a continuation of the partnership originally known as AgriGeneral Company, L.P. Defendant Croton Farm LLC ("Croton Farm") is a limited liability corporation

organized in Delaware on October 1, 1997 and has a one percent ownership interest in, and is the general partner of, Buckeye Egg Farm, L.P. Croton Farm LLC has two members: Anton Pohlmann and Poultry Investors Group, Inc. Poultry Investors Group, Inc. is an Ohio corporation and Anton Pohlmann is its sole shareholder. Defendant Anton Pohlmann has a ninety-nine percent ownership interest in, and is the limited partner of, Buckeye Egg Farm, L.P., and owns or owned the properties and buildings utilized by Buckeye for the commercial production of eggs at its Ohio Locations. These properties and buildings are or were leased to Buckeye.

Defendants do not admit any fact, interpretation or application of law, violation, or liability to the United States or jurisdiction except to the extent necessary to ensure enforcement of this Consent Decree arising out of the transactions or occurrences alleged in the Amended Complaint.

The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest. NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I, below, and with the with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. For purposes of this Consent Decree, Defendants agree that this Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to 28 U.S.C. § 1391 and 1395, and Section 113(b) of the CAA, 42 U.S.C.

§ 7413(b), because the Marseilles and the Mt. Victory Locations, two of the three Locations at which the violations alleged herein occurred, are located in the Western Division of this District. For purposes of this Decree, or any action to enforce this Decree, Defendants consent to the Court's jurisdiction over this Decree or such action and over Defendants, and consent to venue in this judicial district.

2. For purposes of this Consent Decree, Defendants agree that the Amended Complaint states claims upon which relief may be granted pursuant to Sections 113, 114, 165, 502 and 503 of the CAA, 42 U.S.C. §§ 7413, 7414, 7475, 7661a, & 7661b. Defendants waive service of the Amended Complaint and accept same for purposes of entering into this Consent Decree.

3. Notice of the commencement of this action has been given to the State of Ohio as required under Section 113(b) of the CAA, 42 U.S.C. § 7413(b).

II. PARTIES BOUND AND NOTICE OF TRANSFER

4. The provisions of this Consent Decree shall apply to and be binding upon the United States and upon Defendants and their partners, officers, agents, successors, assigns, and all persons acting on their behalf.

5. Defendants have sold the assets comprising the property at the Croton Location to Ohio Fresh Eggs, LLC ("Ohio Fresh"). Defendants are also currently negotiating the sale of assets comprising the Mt. Victory and Marseilles Locations to Ohio Fresh. These transfers will be conditioned upon Ohio Fresh's agreement to undertake the obligations required by this Decree, including the requirements relating to the Croton Location, and to impose these same obligations upon any subsequent transferees of these properties, as provided in a written agreement between Defendants and Ohio Fresh, enforceable by the United States as a third-party beneficiary of such agreement. This Consent Decree remains enforceable against Defendants

regardless of these transfers, as set forth in Paragraphs 6 and 7, infra, although the Parties recognize that Defendants and Ohio Fresh intend to enter into certain indemnification agreements between themselves.

6. Unless otherwise agreed to in writing by EPA, no change in ownership, corporate, or partnership status relating to any of the Buckeye Locations, or conveyance of title, easement, or other interest in the Buckeye Locations, including but not limited to any lease or transfer of assets or real or personal property, will alter the Defendants' obligation to comply with the requirements of this Consent Decree or to ensure compliance by any successor or assign of the Defendants, regardless of whether the Defendants continue to exist following the transaction.

7. It shall be Defendants' obligation to require compliance by any person purchasing, leasing or operating any of the Buckeye Locations with the relevant portions of the Consent Decree, and to reserve the right to monitor compliance by that person. Defendants shall remain liable to EPA for any stipulated penalties that may accrue due to any non-compliance by that person. In all cases it shall be Defendants' obligation with respect to any portion of the Buckeye Locations conveyed or leased to ensure access to property and information pursuant to Section X of this Consent Decree. Any purchase and sale agreement or lease or other instrument of conveyance for the Buckeye Locations shall contain a notice that the Buckeye Location at issue is the subject of this Consent Decree, setting forth the case caption and index number, and the Court having jurisdiction, and a memorandum of agreement setting forth this notice shall be filed with the local property recorder's office in connection with the consummation of any such sale or lease.

8. Except with respect to the anticipated transfer of the Marseilles and Mt. Victory locations to Ohio Fresh, Defendants, in addition to any notification required by the CAA, shall

notify EPA, the United States Attorney for the Northern District of Ohio, Western Division, and the United States Department of Justice, in accordance with Section XVIII of this Decree (Notices), at least thirty (30) days prior to a change in the operational and/or ownership control of any portion of any of the Buckeye Locations, including but not limited to the conveyance of title, easement, or other interest, including a leasehold interest. This notice shall also include a description of both the current and expected future activities on that portion of the Buckeye Location or Locations to be conveyed, leased, or otherwise alienated. At least fifteen (15) days prior to such transfer, Defendants shall provide a copy of this Consent Decree to the proposed transferee. Any transfer of ownership or operation of the Locations without complying with this Paragraph constitutes a violation of this Decree.

9. Defendants shall provide a copy of this Consent Decree to all officers, management employees, and agents whose duties might reasonably include compliance with any provision of this Decree. Defendants shall provide to each contractor hired to perform any of the Work (as defined herein) required by this Consent Decree or its Attachments (and to each person representing the Defendants with respect to the Work), a copy of all Sections of this Decree and/or Attachments relevant to the contractor's employment, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree and its Attachments. Defendants or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Defendants nonetheless shall be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. Nothing in this Consent Decree shall be construed to prevent Defendants from enforcing any contractual obligations of their contractors or subcontractors.

10. In any action to enforce this Consent Decree, Defendants shall not raise as a defense the failure by any of their officers, directors, employees, agents, or contractors to take any action necessary to comply with the provisions of this Consent Decree, subject to any claim of force majeure under Section XIII (Force Majeure).

III. DEFINITIONS

11. Terms used in this Consent Decree that are defined in the CAA or in regulations promulgated pursuant to the CAA shall have the meanings assigned to them in the CAA or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

“Buckeye Location” shall mean any one of Defendants’ commercial egg production locations in Ohio, specifically, the Croton Location, located in Licking County, Croton, Ohio, the Marseilles Location, located in Wyandot County, Harpster, Ohio, and the Mt. Victory Location, located in Hardin County, LaRue, Ohio (collectively, “the Buckeye Locations”).

“Compliance Schedule” means the document attached hereto as Attachment A;

“Complaint” or “Amended Complaint” shall mean the complaint, as amended, filed by the United States in this action;

“Consent Decree” or “Decree” shall mean this Decree and all appendices attached hereto (listed in Section XXV);

“Day” shall mean a calendar day unless expressly stated to be a working day.

In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day;

“Defendant(s)” shall mean Buckeye Egg Farm, L.P., Croton Farm LLC, and Anton Pohlmann;

"EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States;

"Interest" shall mean interest at the rate established by the Secretary of Treasury pursuant to 31 U.S.C. § 3717. Such interest shall be compounded annually on October 1st of each year. "Notify" and "Submit" and other terms signifying an obligation to transmit or communicate documents and information mean to deliver in person, deposit in the United States mail, or dispatch by express courier not later than the day that such transmission or communication is required by this Consent Decree. Should such day be a weekend day or a federal holiday, the delivery, deposit, or dispatch shall be due on the next working day;

"Paragraph" shall mean a portion of this Decree identified by an Arabic numeral;

"Parties" shall mean the United States and Defendants;

"Section" shall mean a portion of this Decree identified by a Roman numeral;

"State" shall mean the State of Ohio;

"United States" shall mean the United States of America, acting on behalf of EPA;

"Work" shall mean all activities Defendants are required to perform under this Consent Decree, together with its Attachments, except those required by Section XV (Information Retention).

IV. GENERAL PROVISIONS

12. Compliance with Applicable Law: All Work undertaken by Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal, state and local laws, permits, and regulations not addressed in this Consent Decree, including, without limitation, federal and state regulations governing the generation, treatment, storage, transport, and disposal of hazardous waste.

13. Permits: Where any portion of the Work requires a federal, state, or local permit or approval not addressed in this Consent Decree, Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

14. The Defendants may seek relief under the provisions of Section XIII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining any permit required for the Work, provided that Defendants have used due diligence in seeking to obtain such permit.

15. This Consent Decree is not, and shall not be construed to be, a permit or modification of a permit issued pursuant to any federal, state, or local statute, ordinance, or regulation.

V. PERFORMANCE OF THE WORK BY DEFENDANTS

16. Defendants shall comply with the provisions, terms, and schedules for operating and upgrading the Buckeye Locations as set forth in Attachment A, which is incorporated by reference into this Consent Decree.

17. If, prior to Defendants' Request for an Acknowledgment of Completion, pursuant to Section IX of this Consent Decree, EPA determines that Defendants' performance of the Work is inadequate or incomplete, EPA will notify Defendants in writing of the activities that must be undertaken to correct or complete the Work, and will set forth in the notice a reasonable period for Defendants to satisfactorily correct or complete the Work. Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to any right provided in this Consent Decree to invoke the dispute resolution procedures set forth in Section XIV (Dispute Resolution).

VI. SUBMISSIONS REQUIRING EPA APPROVAL

18. Approval of Deliverables. After review of any plan, report, or other item that is required to be submitted pursuant to this Consent Decree, EPA shall, in writing: (a) approve the submission; (b) approve the submission upon specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission or (e) any combination of the above.

19. If the submission is approved pursuant to Paragraph 18(a), Defendants shall take all actions required by the plan, report, or other item, as approved. If the submission is conditionally approved or approved only in part, pursuant to Paragraph 18(b) or (c), Defendants shall, upon written direction of EPA take all actions required by the approved plan, report, or other items that EPA determines are technically severable from any disapproved portions, subject to Defendants' right to dispute only any conditions imposed by EPA or any disapproved portions under Section XIV of this Decree (Dispute Resolution).

20. If the submission is disapproved in whole or in part pursuant to Paragraph 18(c) or (d), Defendants shall, within forty-five (45) days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval. Any Stipulated Penalties applicable to the original submission as provided in Section XII of this Decree shall accrue during the forty-five (45)-day period or other specified period, but shall not be payable unless the resubmission is untimely or is disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of Defendants' obligations under this Decree, Defendants shall be deemed to have failed to submit a plan, and the Stipulated Penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

21. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, EPA may again require Defendants to correct any deficiencies, in accordance with this Section, subject to Defendants' right to invoke Dispute Resolution and the right of EPA to seek Stipulated Penalties as provided in the preceding Paragraphs.

22. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon written approval by EPA, be enforceable under this Consent Decree. In the event EPA approves or conditions a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, such approval shall be in writing, and the approved, modified or conditioned portion shall be enforceable under this Consent Decree.

VII. REPORTING REQUIREMENTS

23. Defendants shall submit quarterly reports as set forth in Section III of Attachment A hereto, disclosing the status and progress of Work under this Consent Decree.

a. If Defendants violate, or have reason to believe that they may violate, any requirement of this Consent Decree, Defendants shall notify the United States of such violation and its likely duration in writing within ten (10) working days of the day Defendants first become aware of the violation, with an explanation of the likely cause of the violation and of the remedial steps taken, and/or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Defendants shall include a statement to that effect in the report. Defendants shall investigate to determine the cause of the violation and then shall submit an amendment to the report, including a full explanation of the cause of the violation, within thirty (30) days of the day Defendants become aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves Defendants of their obligation to provide the requisite notice for purposes of Section XIII (Force Majeure).

b. In the case of any violation or other event that may pose an imminent and substantial endangerment to the public health or welfare or the environment, Defendants shall notify EPA orally or by electronic or facsimile transmission as soon as possible, but not later than twenty-four (24) hours after Defendants first knew of the violation or event. This procedure is in addition to the requirements set forth in the preceding Paragraph.

24. All reports shall be submitted to the persons designated in Section XVIII of this Consent Decree (Notices). The reporting requirements of this Consent Decree do not relieve Defendants of any reporting obligations required by the CAA or implementing regulations, or by any other federal, State, or local law, regulation, permit, or other requirement. Any information provided pursuant to this Consent Decree may be used by the United States or Defendants in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

VII. CERTIFICATIONS

25. Whenever this Consent Decree, including Attachment A, requires the Defendants to submit a work plan, design, study, report, or other document, it shall be signed and certified as accurate by a responsible corporate officer as defined in 40 C.F.R. § 270.11(a)(1), or his duly authorized representative. This certification shall include the following language:

I certify under penalty of law that this document and any attachments to it were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing and willful submission of a materially false statement.

IX. COMPLETION OF THE WORK

26. Within ninety (90) days after Defendants conclude that all phases of the Work required under any section of Attachment A have been fully performed, Defendants shall submit one or more written reports by qualified professionals in the relevant technical fields, certifying in compliance with Section VII of this Consent Decree that the Work required by that section of Attachment A has been completed in full satisfaction of its requirements or that any failure to complete Work has been disclosed to EPA and rectified in accordance with Paragraphs 23(a) and 17 of this Consent Decree. These reports shall indicate the case name and civil action number, and shall be certified in accordance with Section VII.

27. If EPA so requests, Defendants shall schedule and conduct an inspection of the Buckeye Locations, to be attended by Defendants and EPA, to review the certified portion of the Work. The State shall also be invited to attend.

28. If, after review of the final written reports and certifications, and any inspection, EPA determines that any portion of the certified Work has not been completed in accordance with this Consent Decree and Attachment A, EPA will notify Defendants in writing of the activities that must be undertaken to complete this portion of the Work. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and Attachment A, or will require Defendants to submit a schedule to EPA for approval pursuant to Section VI (Submissions Requiring Agency Approval). Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right, if any, to invoke the dispute resolution procedures set forth in Section XIV (Dispute Resolution). Upon completion of these activities, Defendants shall submit revised written reports and certifications for the completed portion of the Work.

29. Within one hundred twenty (120) days of Defendants' completion of any remaining Work performed pursuant to Paragraph 28, or such other period as may be approved by EPA, Defendants shall submit a Request for Acknowledgment of Completion, referencing all final written reports and certifications submitted pursuant to Paragraph 26 or 28, supra, and Attachment A. Following its receipt of the Request for Acknowledgment of Completion, EPA may request an inspection or provide notice of activities that must be undertaken to complete the Work, as set forth in Paragraph 28. If EPA concludes, based on the initial or any subsequent Request for an Acknowledgment of Completion by Defendants, and after a reasonable opportunity for review and comment by the State, that the Work required under Attachment A has been performed in accordance with this Consent Decree, and that any failure to complete Work has been disclosed to EPA and rectified in accordance with Paragraphs 23(a) and 17 of this Consent Decree, EPA will so notify the Defendants in writing, which notice shall constitute the Acknowledgment of Completion.

X. ACCESS

30. Commencing upon the date of lodging of this Consent Decree, Defendants agree to provide the United States and its representatives, including its agencies, employees and authorized agents (including contractors and subcontractors), access at all reasonable times to the Buckeye Locations and any other property owned or controlled by Defendants or accessible to Defendants by contract, to which access is required for the implementation of this Consent Decree, for the purposes of conducting any activity related to this Consent Decree, including, but not limited to:

- a. Monitoring the Work;
- b. Verifying any data or information submitted to the United States;

- c. Conducting investigations relating to the Work;
- d. Obtaining samples relating to the Work;
- e. Inspecting and copying records, operating logs, contracts, or other

documents maintained or generated by Defendants or their agents related to the Work, subject to Defendants' right to assert the existence of privilege in accordance with Paragraph 64 of this Consent Decree; and

- f. Assessing Defendants' compliance with this Decree.

31. The activities authorized by this Section include, but are not limited to:

- a. Interviewing and obtaining oral, written, or recorded statements from personnel involved in activities pertaining to the Work required by this Consent Decree, whether such personnel are employed by the Defendants or by their contractors or subcontractors;

- b. Inspecting, reviewing, and copying all documents that relate to activities pertaining to the Work required by this Consent Decree, subject to Defendants' right to assert the existence of privilege in accordance with Paragraph 64 of this Consent Decree;

- c. Observing, photographing, or otherwise documenting the performance or completion of activities pertaining to the Work required by this Consent Decree; and

- d. Conducting such other monitoring and investigative activities as EPA deems necessary to monitor activities pertaining to the Work required by this Consent Decree.

32. At the time of entering a Buckeye Location, EPA employees and representatives shall present valid credentials or other official authorization. The Defendants shall have the right to accompany EPA representatives throughout their presence at the Buckeye Location, and to monitor and record the investigative activities conducted by EPA, so long as such monitoring or recording does not delay or impede the investigative activities of EPA. If a recording of EPA's

investigatory activities is made by EPA, or the Defendants, a copy of the recording shall be provided to the other participant.

33. Defendants, upon request at the time of sampling, may obtain splits of any samples taken by the United States, EPA, the State, or their representatives, and, upon request, shall be provided with copies of the results of sampling, analysis, tests, or other raw data generated as a result of activities authorized under Paragraphs 30, 31 and 32 of this Consent Decree.

34. Notwithstanding the foregoing Paragraph or any other provision of this Consent Decree, the United States hereby retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under the CAA and any other applicable statutes, regulations or permits.

XI. CIVIL PENALTY

35. Defendants will pay a civil penalty of Eight Hundred Eighty Thousand Five Hundred and Ninety Eight Dollars (\$880,598.00) to the United States for the violations enumerated in the Complaint in this action.

a. Within five (5) working days of Defendants' receipt of notice of the lodging of this Consent Decree with the Court, Defendants shall establish an interest bearing escrow account meeting the requirements of this Paragraph in a federally-insured bank duly chartered in the State of Ohio, and shall remit to the escrow account funds in the amount of Eight Hundred Eighty Thousand Five Hundred and Ninety Eight Dollars (\$880,598.00).

b. Within the same time frame, Defendants shall send to the United States, by overnight mail directed to the addresses specified in Section XVIII (Notices) of this Decree, copies of the documents establishing and funding the escrow account, together with information containing the identities of the bank and of the escrow agent, the bank account under which the escrow

account is established, and a bank statement or deposit slip showing the initial balance of the escrow account. The correspondence shall also reference the civil action number of this case, and the Department of Justice ("DOJ") case number (90-11-2-06089).

c. All funds paid into the escrow account by Defendants shall remain in escrow and may not be withdrawn by any person except to make the payment required by Paragraph 35 of this Decree, unless the Court determines that entry of this Consent Decree is not in the public interest and declines to enter it as an order. If the Court declines to enter the Consent Decree as an order, all sums in the escrow account shall be governed by the Stipulation and Supplemental Stipulation of the Parties dated January 22, and 23, 2004. Copies of these Stipulations are attached hereto as Attachment B and C, respectively.

d. Within ten (10) working days of Defendants' receipt of notice of entry of the Consent Decree by the Court, Defendants shall remit the penalty payment to the United States. Payment shall be made by Electronic Funds Transfer ("EFT") to the U.S. Department of Justice lockbox bank at the Office of the United States Attorney for the Northern District of Ohio, Western Division, referencing the DOJ Number 90-11-2-06089, and the U.S.A.O. file number. Payment shall be made in accordance with instructions to be provided to Defendants following lodging of the Consent Decree by the Financial Litigation Unit of the U.S. Attorney's Office for the Northern District of Ohio, Western Division. Any EFTs received at the U.S. D.O.J. lockbox bank after 4:00 P.M. (Eastern Time) will be credited on the next business day. At the time of payment, Defendants shall simultaneously send written notice of payment and a copy of any transmittal documentation (which should reference DOJ case number 90-11-2-06089 and the civil action number of this case) to the United States in accordance with Section XVIII of this Decree (Notices).

36. In the event that the payment required by Paragraph 35 is not made in compliance with the terms of Paragraph 35, Defendants shall be subject to late charges by the United States in accordance with the Debt Collection Act of 1982, 31 U.S.C. § 3717 and 40 C.F.R. § 13.11. First, Defendants shall pay Interest on the unpaid balance at the rate established by the Secretary of Treasury pursuant to 31 U.S. § 3717. The Interest on the penalty shall begin to accrue on the 11th day following Defendants' receipt of notice of the entry of the Consent Decree, and shall continue to accrue at the rate specified through the date of payment. Such Interest shall be compounded each federal fiscal year. Second, Defendants shall pay a 6% per annum late fee on any principal amount not paid within ninety (90) days of the due date. Third, Defendants shall pay an administrative costs (handling) charge of fifteen dollars (\$15) for each month past the due date specified by the Consent Decree that it does not pay the penalty in full. Payments of Interest, late fees and handling charges made under this Paragraph shall be in addition to stipulated penalties provided in Section XII (Stipulated Penalties) or any other remedies or sanctions available to Plaintiffs by virtue of Defendants' failure to make timely payments under this Section. Payments made pursuant to this Paragraph shall be made in accordance with the procedures set forth in Paragraph 35.

37. Defendants agree that the payment of the Civil Penalty is not assignable or transferable to any other party in connection with any sale of assets pertaining to the Buckeye Locations.

38. Defendants shall not deduct the civil penalty paid under this Section in calculating their federal income tax.

XII. STIPULATED PENALTIES

39. If Defendants fail to pay the civil penalty required to be paid under Section XI of this Decree (Civil Penalty) when due, Defendants shall pay a Stipulated Penalty of \$1,000 per day for each day that the payment is late. Late payment of the civil penalty shall be made in accordance with Section XI, Paragraphs 35 and 36, above. Stipulated Penalties shall be paid in accordance with Section XII, Paragraph 47, below. All transmittal correspondence shall state that any such payment is for late payment of the civil penalty due under this Decree, or for Stipulated Penalties for late payment, as applicable, and shall include the identifying information set forth in Paragraphs 35 above.

40. Defendants shall be liable for Stipulated Penalties to the United States for violations of this Consent Decree as specified below, unless excused under Section XIII (Force Majeure). A violation includes failing to perform any of the Work required by the terms of this Decree, including any work plan or schedule approved under this Decree, according to all applicable requirements of this Decree and within the specified time schedules established by or approved under this Decree.

41. Compliance Milestones. The following Stipulated Penalties shall accrue per violation per day for each violation of the requirements of Attachment A:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500	1st through 14th day
\$750	15th through 30th day
\$1,500	31st day and beyond

42. Reporting Requirements. The following Stipulated Penalties shall accrue per violation per day for each violation of the reporting requirements of Section VII of this Consent Decree:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$250	1st through 14th day
\$500	15th through 30th day
\$1,000	31st day and beyond

43. Subject to the provisions of Section XIV (Dispute Resolution), Stipulated Penalties under this Section shall begin to accrue on the day after performance is due or on the day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated Penalties shall accrue simultaneously for separate violations of this Consent Decree. Defendants shall pay any Stipulated Penalty within thirty (30) days of receiving the United States' written demand, subject to the dispute resolution provision.

44. The United States may, in the unreviewable exercise of its discretion, reduce or waive Stipulated Penalties otherwise due it under this Consent Decree.

45. Stipulated Penalties shall continue to accrue as provided in Paragraph 43, above, during any Dispute Resolution, with Interest on accrued penalties payable and calculated at the rate established by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717 but need not be paid until the following:

- a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to the Court, Defendants shall pay accrued penalties determined to be owing,

together with Interest, to the United States within thirty (30) days of the effective date of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to the Court and the United States prevails, Defendants shall pay all accrued penalties determined by the Court to be owing, together with Interest, within sixty (60) days of receiving the Court's decision or order, except as provided in Subparagraph c, below;

c. If any Party appeals the District Court's decision, Defendants shall pay all accrued penalties determined to be owing, together with Interest, within fifteen (15) days of receiving the final appellate court decision.

46. Defendants shall pay Stipulated Penalties for violations occurring between the date of lodging and the Effective Date of this Consent Decree within thirty (30) days of the Effective Date of this Decree.

47. Defendants shall, as directed by the United States pursuant to Paragraph 43 and 44, pay Stipulated Penalties owing to the United States by EFT in accordance with Section XI, Paragraph 35(d), above.

48. Defendants shall not deduct Stipulated Penalties paid under this Section in calculating their federal income tax.

49. If Defendants fail to pay Stipulated Penalties according to the terms of this Consent Decree, the United States shall be entitled to collect Interest on such penalties, as provided for in 31 U.S.C. § 3717.

50. Subject to the provisions of Section XVI of this Consent Decree (Effect of Settlement/Reservation of Rights), the Stipulated Penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States for

Defendants' violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of the CAA Defendants shall be allowed a credit, for any Stipulated Penalties paid, against any statutory penalties imposed for such violation.

XIII. FORCE MAJEURE

51. A "force majeure event" is any event beyond the control of Defendants, their contractors, or any entity controlled by Defendants that delays the performance of any obligation under this Consent Decree despite Defendants' best efforts to fulfill the obligation. "Best efforts" includes anticipating any potential force majeure event and addressing the effects of any such event (a) as it is occurring and (b) after it has occurred, to prevent or minimize any resulting delay to the greatest extent possible. "Force Majeure" does not include Defendants' financial inability to perform any obligation under this Consent Decree.

52. Defendants shall provide notice orally or by electronic or facsimile transmission as soon as possible, but not later than five (5) days after the time Defendants first knew of, or by the exercise of due diligence, should have known of, a claimed force majeure event. Defendants shall also provide written notice, as provided in Section XVIII of this Consent Decree (Notices), within fourteen (14) days of the time Defendants first knew of, or by the exercise of due diligence, should have known of, the event. The notice shall state the anticipated duration of any delay; its cause(s); Defendants' past and proposed actions to prevent or minimize any delay; a schedule for carrying out those actions; and Defendants' rationale for attributing any delay to a force majeure event. Failure to give such notice shall preclude Defendants from asserting any claim of force majeure.

53. If the United States agrees that a force majeure event has occurred, the United States shall agree to extend the time for Defendants to perform the affected requirements for the time

necessary to complete those obligations. An extension of time to perform the obligations affected by a force majeure event shall not, by itself, extend the time to perform any other obligation. Where the United States agrees to an extension of time, the appropriate modification shall be made pursuant to Section XX of this Consent Decree (Modification).

54. If the United States does not agree that a force majeure event has occurred, or does not agree to the extension of time sought by Defendants, the United States' position shall be binding unless Defendants invoke Dispute Resolution under Section XIV of this Consent Decree. In any such dispute, Defendants bear the burden of proving, by a preponderance of the evidence that such claimed force majeure event is a force majeure event; that Defendants gave the notice required by Paragraph 52; that the force majeure event caused any delay Defendants' claim was attributable to that event; and that Defendants exercised best efforts to prevent or minimize any delay caused by the event.

XIV. DISPUTE RESOLUTION

55. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, such procedures shall not apply to actions by the United States to enforce obligations of the Defendants that have not been disputed in accordance with this Section.

56. Informal Dispute Resolution. Any dispute subject to dispute resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Defendants send the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed twenty (20) days from the date the dispute arises, unless that period

is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States shall be considered binding unless, within twenty (20) days after the conclusion of the informal negotiation period, Defendants invoke formal dispute resolution procedures as set forth below.

57. Formal Dispute Resolution. Defendants shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but may not be limited to, any factual data, analysis, or opinion supporting Defendants' position and any supporting documentation relied upon by Defendants.

58. The United States shall serve its Statement of Position within forty-five (45) days of receipt of Defendants' Statement of Position. The United States' Statement of Position shall include, but may not be limited to, any factual data, analysis, or opinion supporting that position and all supporting documents relied upon by the United States. The United States' Statement of Position shall be binding on Defendants, unless Defendants file a motion for judicial review of the dispute in accordance with the following Paragraph.

59. Defendants may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XVIII of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within forty-five (45) days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Defendants' position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

60. The United States shall respond to Defendants' motion within the time period provided in the Local Rules of this Court, unless the Parties stipulate otherwise. Defendants may file a reply memorandum, to the extent permitted by the Local Rules or the Parties' stipulation, as applicable.

61. In any dispute under this Paragraph, Defendants shall bear the burden of demonstrating that their position is consistent with this Consent Decree and the CAA and that Defendants are entitled to relief under applicable law. The United States reserves the right to argue that its position is reviewable only on the administrative record and must be upheld unless arbitrary and capricious or otherwise not in accordance with law.

62. The invocation of dispute resolution procedures under this Section shall not extend, postpone, or affect in any way any obligation of Defendants under this Consent Decree, not directly in dispute. Stipulated Penalties with respect to the disputed matter shall continue to accrue from the first day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 45, above. Except as otherwise prescribed by the Court, if Defendants do not prevail on the disputed issue, Stipulated Penalties shall be assessed and paid as provided in Section XII (Stipulated Penalties).

XV. INFORMATION RETENTION

63. Until two years after the termination of this Consent Decree, Defendants shall retain, and shall instruct their contractors and agents to preserve, all non-identical copies of all records and documents (including records or documents in electronic form) in their or their contractors' or agents' possession or control, or that come into their or their contractors' or agents' possession or control, and that relate in any manner to Defendants' performance of the Work under this Consent Decree. This record retention requirement shall apply regardless of

any corporate or institutional document-retention policy to the contrary. At any time during this record-retention period, the United States may request copies of any documents or records required to be maintained under this Paragraph.

64. At the conclusion of the document-retention period provided in the preceding Paragraph, Defendants shall notify the United States at least ninety (90) days prior to the destruction of any records or documents subject to the requirements of the preceding Paragraph, and, upon request by the United States, Defendants shall deliver any such records or documents to EPA. Defendants may assert that certain documents, records, or other information are privileged under the attorney-client privilege or any other privilege recognized by federal law, or that otherwise qualify as confidential business information pursuant to 40 C.F.R. Part 2. If Defendants assert such a privilege, they shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Defendants. However, no documents, reports, or other information created or received pursuant to the requirements of this Consent Decree shall be withheld on the grounds that they are privileged.

65. The Consent Decree in no way limits or affects any duty or obligation of Defendants to maintain records or information imposed by applicable federal or State laws, regulations, or permits.

Consent Decree, warrant or aver in any manner that Defendants' compliance with any aspect of this Consent Decree will result in compliance with provisions of the CAA.

70. This Consent Decree does not limit or affect the rights of Defendants or of the United States against any third parties not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Defendants.

71. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XVII. COSTS

The Parties shall bear their own costs in connection with this action and the Consent Decree, including attorneys' fees, except as otherwise authorized by applicable law.

XVIII. NOTICES

72. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

To the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-11-2-06089

Compliance Tracker
Air Enforcement and Compliance Assurance Branch
U.S. Environmental Protection Agency
Region 5, AE-17J
77 W. Jackson Blvd.
Chicago, IL 60604

and

Director, Office of Regulatory Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Mailcode 2241A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

To Defendants:

John D. Austin, Jr.
Patton Boggs LLP
2550 M Street, N.W.
Washington, DC 20037

David E. Northrop
Porter Wright Morris & Arthur LLP
41 South High Street
Columbus, OH 43215-6194

73. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

74. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XIX. RETENTION OF JURISDICTION

75. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Section XIV and XX, or effectuating or enforcing compliance with the terms of this Decree.

XX. MODIFICATION

76. Except as specifically provided for herein, there shall be no modifications or amendments of this Consent Decree without written agreement of the Parties to this Consent Decree and approval by this Court. Changes to the technical and schedule provisions set forth in Attachment A hereto may be made without approval by the Court under the terms set forth in Attachment A, or upon written agreement between the Defendants and EPA.

77. In the event that a transferee of property under Section II of this Consent Decree should desire to become a party to this Consent Decree and subject to all its terms and provisions, it may do so upon written approval of the United States, in which event a supplemental signature page will be affixed to this Consent Decree and filed with the Court.

XXI. EFFECTIVE AND TERMINATION DATES

78. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court. Provided that all penalties are paid pursuant to Sections XI (Civil Penalty) and XII (Stipulated Penalties) of this Consent Decree, the Consent Decree shall be terminated as follows:

a. Following EPA's issuance of the Acknowledgment of Completion of the Work pursuant to Section IX of this Consent Decree, the parties may move jointly to terminate this Consent Decree based on their representations that all its requirements have been satisfied, and the Court may order such termination after conducting such inquiry as it deems appropriate.

b. If the United States does not issue an Acknowledgment of Completion of the Work following a request by the Defendants in accordance with Section IX of this Consent Decree, then Defendants may invoke Dispute Resolution under Section XIV, and subsequent judicial review under Paragraph 59, of this Decree.

79. Termination of this Consent Decree in accordance with Paragraph 78, supra, shall not terminate the requirements of Section XV (Information Retention), which shall terminate pursuant to the terms of that Section.

80. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Defendants consent to entry of this Consent Decree without further notice.

XXII. SIGNATORIES/SERVICE

81. Each undersigned representative of Defendants and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

82. This Consent Decree may be signed in counterparts, and such counterpart signature pages shall be given full force and effect .

83. Defendants agree not to oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified Defendants in writing that it no longer supports entry of the Decree.

84. Defendants agree to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXIII. INTEGRATION

85. This Consent Decree, including Attachments A, B, and C, constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than these Attachments, which are attached to and incorporated in this Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Decree.

XXIV. FINAL JUDGMENT

86. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States and Defendants. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

XXV. APPENDICES

87. The following appendices are attached to and incorporated into this Consent Decree: "Attachment A" is the Compliance Schedule setting forth the Work required of the Defendants under this Consent Decree. "Attachment B" is the Stipulation to Dismiss, Without Prejudice, Plaintiff's Application for a Prejudgment Writ of Attachment, filed with the Court in this matter on January 22, 2004. "Attachment C" is the Supplemental Stipulation to the Stipulation to Dismiss, Without Prejudice, Plaintiff's Application for a Prejudgment Writ of Attachment, filed with the Court in this matter on January 23, 2004.

UNITED STATES DISTRICT JUDGE
Northern District of Ohio, Western Division

FOR PLAINTIFF UNITED STATES OF
AMERICA

Tom Sansonetti

THOMAS L. SANSONETTI
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice

By: Deborah M. Reyher
DEBORAH M. REYHER

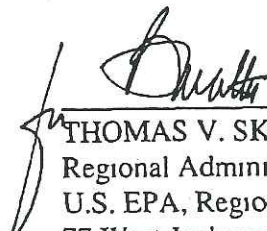
Senior Attorney
Environmental Enforcement Section
U.S. Department of Justice
Washington, D.C.
(202) 514-4113


GREGORY A. WHITE
United States Attorney
Northern District of Ohio

By: Robert Young
ROBERT YOUNG
Assistant United States Attorney
4 Seagate, Suite 308
Toledo, Ohio 43604

By: Phyllis P. Harris
PHYLLIS HARRIS
Acting Assistant Administrator
Office of Enforcement & Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

By: Robert A. Kaplan
ROBERT A. KAPLAN
Division Director
MYRON A. ENG
Attorney
Office of Regulatory Enforcement
Office of Enforcement & Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460


THOMAS V. SKINNER
Regional Administrator
U.S. EPA, Region 5
77 West Jackson Blvd.
Chicago, IL 60604


MARY T. McAULIFFE
Associate Regional Counsel
United States Environmental Protection
Agency
77 West Jackson Blvd.
Chicago, IL 60604

FOR DEFENDANTS




ANTON POHLMANN

Date: Jan. 30, 2004

BUCKEYE EGG FARM, L.P.

By: Croton Farm LLC, its General Partner

Sole Members:


Anton Pohlmann

Poultry Investors Group, Inc., an Ohio corporation

By: 

Anton Pohlmann

CROTON FARM LLC



Anton Pohlmann

Poultry Investors Group, Inc., and Ohio Corporation

By: 

Anton Pohlmann

ATTACHMENT A
Buckeye Egg Farm - Emission Controls

1. Defendants shall implement the requirements of this Attachment A to the Consent Decree between the United States and Defendants in accordance with the schedules provided herein at each layer barn at Buckeye's Croton, Marseilles and Mt. Victory Locations.

a. Nothing in this Attachment shall be deemed to prevent the re-opening of currently closed layer barns at the Marseilles Location pursuant to the permits issued by ODA on February 2, 2004, but the operation of such re-opened barns shall thereafter be subject to this Attachment. All requirements of this Attachment A are subject to the Consent Decree, including, without limitation, provisions relating to the submission of documents requiring EPA approval, notice, and stipulated penalties, unless otherwise specified in this Attachment.

b. Nothing in the Consent Decree or this Attachment shall be deemed to preclude, be deemed inconsistent with, or be deemed as an adverse admission with respect to Buckeye's, or any successor's, right to assert that various sites at the Croton Location constitute separate facilities or separate emission sources for purposes of calculating emissions from the stationary sources or in determining the applicability of any requirements under the federal Clean Air Act, in connection with any action other than an action brought pursuant to this Consent Decree. Nothing in the Consent Decree or this Attachment shall preclude the United States from asserting in any such action that various sites at the Croton Location constitute only one facility or emission source for purposes of calculating emissions or in determining the applicability of any requirement under the Clean Air Act.

2. Defendants have proposed a system for controlling particulate matter (PM) emissions from layer barns at the Croton, Marseilles and Mt. Victory Locations using new controls or adaptations of controls used elsewhere. Similarly, Defendants propose the use of enzyme additive products to control ammonia emissions. This Attachment provides a protocol for testing the PM emission controls or adaptations of controls used elsewhere and enzyme additive product, and for implementing or altering the approaches proposed by Defendants based on the data collected.

I. PARTICULATE MATTER CONTROLS

A. System Design

3. By March 15, 2004, Defendants shall submit to EPA for review and approval a Proposed PM Control Design and Implementation Plan ("PM Plan") for a system of weighted plastic sheeting and impaction media, and/or other emission controls, to be installed and operated alongside the exhaust fans in its layer barns as provided in Section I.C, below, to reduce PM emitted via the fans into the ambient air (the "Particulate Impaction System" or "System"), consistent with the System outlined in Exhibit 1 hereto. The PM Plan shall include:

a. A description of the proposed Particulate Impaction System;

b. An explanation of the Particulate Impaction System design and installation procedures;

c. A summary of the estimated costs associated with the construction, installation, implementation and/or operation of the proposed Particulate Impaction System, including any estimated cost savings associated with the use of the System;

d. A description of the expected PM emission reductions and reasons for the reductions expected to result from the use of the proposed Particulate Impaction System. This description must include any reasonably available data that substantiates the expected emission reductions from the Defendants' barns, as well as other locations where the Defendants are aware that the Particulate Impaction System has been or is expected to be installed;

e. A schedule for reviewing any bids associated with the construction and installation of the Particulate Impaction System, purchasing all relevant equipment, construction/installation of the Particulate Impaction System, start-up of the Particulate Impaction System, and time necessary to adjust the System for optimum performance;

f. Proposed reporting and record-keeping requirements that will allow EPA to track Defendants' progress toward installing, completing and operating the proposed Particulate Impaction System; and

g. A description of any other emissions or waste streams expected to result from the use of the Particulate Impaction System that could have adverse effects on the environment, public health or welfare, and a description of how such emissions or waste streams will be managed.

4. The PM Plan shall also propose a protocol for testing the Particulate Impaction System consistent with the requirements outlined in Section I.B , below.

5. Defendants may include in the PM Plan additional or alternative emission controls or proposed alterations to the Particulate Impaction System outlined in Exhibit 1 , or to the testing requirements set forth in Section I.B , infra, based on Defendants' and EPA's evaluation of the Particulate Impaction System and any other potential emissions control devices, systems or operational restrictions. EPA's approval of control systems, operational restrictions, testing conditions and/or schedules in the PM Plan that depart from the requirements of this Attachment shall be deemed an amendment of this Attachment. Any such approval must be in writing. If EPA does not approve such proposed alterations, then the requirements of this Attachment shall apply. EPA's decision to approve or disapprove any alterations to the Particulate Impaction System or to the testing requirements set forth in this Attachment shall not be subject to the Dispute Resolution provisions of the Consent Decree, and shall only be subject to review by the United States District Court if Defendants can establish on the administrative record that EPA's decision was arbitrary and capricious, pursuant to the Administrative Procedures Act, 5 U.S.C. § 706(2)(A).

6. Defendants shall provide copies of the PM Plan to the Ohio Environmental Protection Agency ("OEPA") and the Ohio Department of Agriculture ("ODA").

B. Testing

1. Marseilles/Mt. Victory Locations

7. Within thirty (30) days of receipt of EPA's approval of the PM Plan, Defendants shall install the approved Particulate Impaction System, and other PM emission control measures in the approved PM Plan, at one fan in a layer barn with a deep-pit manure management system at the Mt. Victory Location, in accordance with the approved PM Plan.

8. Within thirty (30) days of the installation of the Particulate Impaction System, pursuant to Paragraph 7, above, Defendants shall complete a test at the selected fan to measure PM and PM-10 concentrations to determine the control efficiency of the Particulate Impaction System. The test will be conducted using the following protocol, to be further developed in accordance with Paragraph 4: On the inlet side of the Particulate Impaction System, install a TEOM 1400A PM-10 sampling head and microbalance, and a gravimetric TSP device. Such devices will also be installed at the outlet side, between the Particulate Impaction System and the ventilation fan. The fan shall be operated continuously and measurements shall be conducted such that any difference between inlet and outlet TSP and PM-10 concentrations can be quantitatively determined to derive the PM control efficiency of the Particulate Impaction System. The sample integration time for the PM-10 analyzer shall be thirty (30) minutes, and the integration time for the TSP samplers shall be daily, or as determined on-site by filter loading. It is anticipated that the test will be conducted for approximately seven (7) days to assess any variability in control efficiency as the Particulate Impaction System accumulates PM. A temporary shelter shall be stationed next to the layer barn to house the TEOM control units and to provide space for the transfer of gravimetric filters to containers for off-site laboratory analysis.

9. Within fourteen (14) days of completion of the tests required in Paragraph 8, supra, Defendants shall submit the test results to EPA. Within twenty-one (21) days of completion of these tests, Defendants shall also submit any proposed changes to the PM Plan to increase the efficacy of the Particulate Impaction System, for EPA's review and approval in accordance with Paragraphs 3, 4, 5, and 6, supra.

10. Within forty-five (45) days of EPA's approval of any changes to the PM Plan, or written confirmation that no changes are required, Defendants shall commence installation of the Particulate Impaction System at all fans throughout one layer barn at the Mt. Victory Location, as selected in the PM Plan, in accordance with the schedule set forth in the approved PM Plan.

11. Within one hundred eighty (180) days of completion of installation of the Particulate Impaction System at all fans in one barn, as required in Paragraph 10, supra, Defendants shall commence emissions testing at that barn using the secondary testing method described in Exhibit 2 hereto, for a period of six (6) continuous months that shall include the month of

August 2004. Defendants shall simultaneously commence emissions testing using the secondary method at a control barn at Mt. Victory selected in the PM Plan of comparable design, age, chicken population, and other relevant parameters. A summary of the validated data, in spreadsheet format, obtained during the secondary emission testing shall be electronically submitted to EPA on a monthly basis throughout the emission testing period, or on such other periodic basis as may be agreed to by the parties. This test may be conducted at the same time as the testing required in Paragraph 29, infra.

12. Within sixty (60) days of completion of the secondary method emissions testing required in Paragraph 11, supra, Defendants shall submit the final month of validated test data, and within thirty (30) days thereafter shall submit their conclusions regarding the annual emission rate to EPA. Defendants shall also submit at this time any proposed changes to the PM Plan to increase the efficacy of the Particulate Impaction System, for EPA's review and approval in accordance with Paragraphs 3,4, 5, and 6, supra.

2. Croton Location

13. At the Croton Location, Defendants are currently effecting a change in bird variety and feed that Defendants believe will substantially reduce particulate emissions. Defendants also will be commencing the use of a manure enzyme additive at the layer barns at the Croton Location. These changes and any other operational changes that Defendants believe will reduce PM emissions shall be included by Defendants in the PM Plan for the Croton Location submitted to EPA for approval pursuant to Paragraphs 3 4, 5 and 6.

14. By May 15, 2004, Defendants shall complete either a Method 5 or 17 PM emissions test over a five (5) day period on a belt battery barn containing chickens of the new variety and consuming the new feed, for comparison with the Method 17 testing on a belt battery barn conducted in August/September 2003. Defendants shall propose in the PM Plan a barn to be tested for this purpose, to most closely approximate conditions in the barn tested in August/September 2003.

15. Within thirty (30) days of completion of the Method 5 or 17 test required in Paragraph 14, supra, Defendants shall submit the test results to EPA, together with any proposed changes to the PM Plan for the Croton Location to further decrease PM emissions, for EPA's review and approval in accordance with Paragraphs 3,4, 5, and 6, supra. Any proposed changes to the PM Plan for the Croton Location shall also include a proposed protocol and schedule for testing and implementing the proposed changes.

16. Within forty-five (45) days of EPA's approval of the test results obtained under Paragraph 14 and approval of any modification of the PM Plan for the Croton Location, Defendants shall commence emission testing at a barn at the Croton Location with the new bird variety and feed and with a belt battery manure handling system, using the secondary testing method described in Exhibit 2 hereto, for a period of six (6) continuous months that shall include the month of August 2004. A summary of the validated data, in spreadsheet format, obtained during the secondary emission testing shall be electronically submitted to EPA on a monthly

basis throughout the emission testing period, or on such other periodic basis as may be agreed to by the parties.

17. Within sixty (60) days of completion of the secondary method emissions testing required in Paragraph 16, supra, Defendants shall submit the final month of validated test data, and within thirty (30) days thereafter shall submit their conclusions regarding the annual emission rate to EPA. Defendants shall also submit at this time any proposed changes to the PM Plan to further reduce PM emissions at the Croton Location, for EPA's review and approval, in accordance with Paragraphs 3, 4, 5, and 6, supra. Any proposed changes to the PM Plan for the Croton Location shall also include a proposed protocol and schedule for testing and implementing the proposed changes.

C. Implementation

18. Within sixty (60) days of Defendants' receipt of EPA's analysis of the test results obtained pursuant to Paragraphs 11 and 16, respectively, or any subsequent testing following EPA's approval of any changes to the PM Plan, Defendants shall commence installation of PM emission control measures under Section I.C.1 or I.C.2, infra, as applicable.

1. Marseilles/Mt. Victory Locations

a. Emissions Less than 250 tpy

19. If EPA determines that test results obtained, pursuant to Paragraph 11, supra, using the methodology set forth in Exhibit 3, indicate that PM emissions using the Particulate Impaction System and any other PM emission control measures approved in the PM Plan will be less than 250 tons per year ("tpy") per Location for either or both the Marseilles and Mt. Victory Locations, then Defendants shall, within sixty (60) days of the EPA determination, commence installation of the Particulate Impaction System in all the layer barns at the Location(s) satisfying this condition, and shall complete the installation within a year of EPA's determination, or in accordance with any modified schedule set forth in the approved PM Plan, but shall not be obligated under the Consent Decree to develop or install additional PM emission controls. Defendants shall not be obligated to submit applications for any applicable federally enforceable permits that may be triggered by emissions less than 250 tpy until one hundred twenty (120) days following receipt of EPA's analysis of the results of tests conducted under Paragraph 11 and reported under Paragraph 12, or any subsequent testing following EPA's approval of any changes to the PM Plan.

20. Defendants shall continue to operate the Particulate Impaction System installed in each layer barn at the Marseilles and Mt. Victory Locations in accordance with Paragraph 19, supra, until one of the following conditions is met:

a. EPA approves in writing an alternative PM control system to be implemented in lieu of or in addition to the Particulate Impaction System and any other PM emissions controls approved in the PM Plan; or

b. A layer barn is closed and no longer houses poultry. Any such layer barn closure must be completed in accordance with all applicable federal, state and local requirements. If Defendants at any time intend to reopen or replace one or more closed barns, they must notify EPA, ODA and OEPA in writing of this plan prior to reopening, and may not reopen any of the closed barns or construct replacement barns until the approved Particulate Impaction System or other PM emission controls approved by EPA are installed therein, or one of the other conditions of Paragraph 20 are met. This provision does not apply to temporary barn closures of less than twelve (12) weeks in duration due to normal operational practices, such as replacement of old layers, routine maintenance and repair, replacement of equipment, clean-out, disease, or infection;

c. The Consent Decree is terminated in accordance with the provisions thereof; or

d. Federally-enforceable permit(s) is/are issued that:

1. imposes operational controls under the synthetic minor permit requirements of the Ohio State Implementation Plan (see Ohio Administrative Code ("OAC") Rules 3745-31-02 and 3745-31-05); or

2. includes PM emission control requirements that equal or exceed those required by this Attachment.

e. A federal agency determines that the operation of the Particulate Impaction System may be harmful to human health, worker safety, the environment, or the poultry, and that the Particulate Impaction System should no longer be operated. Within thirty (30) days of such a determination, Defendants shall submit a proposed alternative PM Plan, in accordance with Paragraphs 3, 4, 5, and 6, supra.

b. Emissions Greater than 250 tpy

21. If EPA determines that test results obtained pursuant to Paragraph 11, supra, using the methodology set forth in Exhibit 3, indicate that PM emissions using the Particulate Impaction System and any other PM emission controls in the approved PM Plan will be greater than 250 tpy at either or both the Marseilles and the Mt. Victory Locations, then, within sixty (60) days of this determination, Defendants shall elect between the following options:

a. Defendants shall propose alternative or additional controls to further reduce PM emissions at the affected Location(s), subject to EPA review and approval, in accordance with Paragraphs 3, 4, 5, and 6, supra. Any such proposal must also include further testing requirements and a proposed schedule for implementation of the alternative or additional controls at all Locations where PM emissions are calculated to exceed 250 tpy. Defendants shall implement the testing protocol and install the alternative or additional controls following EPA's written approval, in accordance with the approved testing protocol and implementation schedule,

and shall comply with Paragraph 20, supra. If EPA does not approve the proposed alternative or additional controls, then Defendants shall comply with Paragraph 21.b , infra;

or

b. Defendants shall apply for a federally enforceable permit to include particulate emission control requirements that equal or exceed those required by this Attachment, and shall comply with all other applicable requirements of the Clean Air Act.

2. Croton Location

a. Emissions Less than 250 tpy

22. If EPA determines that the secondary test method, described in Exhibit 2 hereto, test results, and/or any subsequent test results, compiled pursuant to Paragraphs 16 and 17, indicate that PM emissions from the Croton Location following the conversion to belt battery systems and using the new bird variety and feed approved in the PM Plan for the Croton Location will be less than 250 tpy, then Defendants shall not be required to install the Particulate Impaction System, and/or any other PM emission controls approved in the PM Plan, at the Croton Location, but shall continue to comply with the approved PM Plan for the Croton Location until terminated in accordance with the requirements of Paragraph 20, supra. Should Defendants wish to make further changes in poultry variety or feed or other measures submitted in the approved PM Plan to control PM emissions, it may do so upon a demonstration satisfactory to EPA, and confirmed by EPA in writing, that such changes will not increase emissions above the 250 tpy level. Defendants shall not be obligated to submit applications for any applicable federally enforceable permits that may be triggered by emissions less than 250 tpy until one hundred twenty (120) days following receipt of EPA's analysis of the results of tests conducted under Paragraph 16 and reported under Paragraph 17, or any subsequent testing following EPA's approval of any changes to the PM Plan.

b. Emissions Greater than 250 tpy

23. If EPA determines that the secondary test method, described in Exhibit 2 hereto, test results, and any other test results, compiled pursuant to Paragraphs 16 and 17, indicate that PM emissions from the Croton Location will exceed 250 tpy, then within sixty (60) days of EPA's determination Defendants shall:

a. Submit to EPA for review and approval, in accordance with Paragraphs 3, 4, 5, and 6, a schedule to install the Particulate Impaction System (or other PM emission controls approved in the PM Plan) at all high rise layer barns operating at the Croton Location that are not converted to belt battery manure handling systems before December 31, 2005. Defendants shall operate the Particulate Impaction System or other approved PM controls at each such layer barn until it is converted to belt battery manure handling systems as required under the ODA permits issued on December 23, 2003, or modified or re-issued thereafter; and

b. Submit to EPA for review and approval, in accordance with Paragraphs 3, 4, 5, and 6, a proposal to test and install PM emission controls on the Croton Location layer barns following their conversion to belt battery systems as required under the ODA permits issued on December 23, 2003, or modification or reissuance thereafter. This proposal may consist of:

1. A modified version of the Particulate Impaction System suited to the design of the renovated barns; or
2. A proposed modification of the PM Plan for the Croton Location designed to reduce PM emissions from the converted layer barns through other means.

Defendants shall implement the testing protocol and install the modified, alternative, or additional controls following EPA's written approval, in accordance with the approved testing protocol and implementation schedule, and shall comply with Paragraph 20, supra. If EPA does not approve the proposed alternative or additional controls, then Defendants shall comply with Paragraph 24.b, infra.

24. If EPA determines that test results at the Croton Location obtained pursuant to Paragraph 23.b indicate that PM emissions from the Croton Location will be less than 250 tpy as a result of the modified PM Plan, then Defendants shall comply with Paragraph 22, supra. If EPA determines that test results for any proposed modification of the PM Plan for the Croton Location pursuant to Paragraph 23.b indicate that PM emissions from the Croton Location will continue to exceed 250 tpy, then, within sixty (60) days of this determination, Defendants shall elect between the following options:

a. Defendants shall propose alternative or additional controls to reduce PM emissions at the Croton Location below 250 tpy, subject to EPA review and approval, in accordance with Paragraphs 3, 4, 5, and 6, supra. Any such proposal must also include further testing requirements and a proposed schedule for implementation of the alternative or additional controls. Defendants shall implement the testing protocol and install the alternative or additional controls, following EPA's written approval, in accordance with the approved testing protocol and implementation schedule, and shall comply with Paragraph 20, supra. If EPA does not approve the proposed alternative or additional technology, then Defendants shall comply with Paragraph 24.b, infra;

or

b. Defendants shall apply for a federally enforceable permit for the Croton Location to include particulate emission control requirements that equal or exceed those required by this Attachment, and shall comply with all other applicable requirements of the Clean Air Act.

II. AMMONIA CONTROLS

A. Croton Location

25. Defendants shall convert the barns at the Croton Location to belt battery manure handling systems, in accordance with the permits issued by ODA on December 23, 2003, or as modified or re-issued thereafter.

26. Each barn at the Croton Location not converted by December 31, 2004 to a belt battery manure handling system shall be included in the testing and implementation plans required under Section II.B, infra, until such time as it is converted to a belt battery manure handling system.

B. Enzyme Additive System

27. By March 1, 2004, Defendants shall submit to EPA for review and approval a Proposed Ammonia Emissions Control Design and Implementation Plan ("Ammonia Plan") for application of an enzyme additive at all layer barns at the Marseilles and Mt. Victory Locations and at all Croton Location barns subject to Paragraph 26, supra, to control ammonia emissions. The Ammonia Plan shall include:

- a. A description of the proposed enzyme additive product or system;
- b. An explanation of the enzyme additive application or other operational procedures;
- c. A summary of the estimated costs associated with the purchase and application of the proposed enzyme additive product or system, including any estimated cost savings associated with the use of this product or system;
- d. A description of the expected emission reductions and reasons for the reductions resulting from the proposed enzyme additive product or system. This description must include any reasonably available data that substantiates the expected emission reductions obtained from the Defendants' barns as well as other locations where the Defendants are aware the enzyme additive product or system has been or is expected to be installed or applied;
- e. A schedule for reviewing any bids associated with the purchase of the enzyme additive product or system, purchasing all relevant product and equipment, any construction necessary for the application or operation of the product or system, start-up of the enzyme additive application process, and time necessary to adjust the enzyme application system for optimum performance;
- f. Proposed reporting and record-keeping requirements that will allow EPA to track Defendants progress toward implementing, completing and operating the proposed enzyme additive application process; and

g. A description of any other emissions or waste streams expected to result from the use of the enzyme additive product or system that could have adverse effects on the environment, public health or welfare, and a description of how such emissions or waste streams will be managed.

The Ammonia Plan shall also propose a protocol for testing the enzyme additive product or system consistent with the requirements outlined in Paragraphs 28 and 29, infra.

28. Within thirty (30) days of EPA's approval of the Ammonia Plan, Defendants shall commence bench scale testing of the enzyme additive product or system, in accordance with the approved Ammonia Plan. Within fifteen (15) days of completion of the bench scale testing of the enzyme additive product or system, Defendants shall submit the test results to EPA. If EPA determines that the bench scale tests indicate that the enzyme additive will reduce ammonia emissions by less than 50%, then Defendants shall submit for EPA's review and approval proposed changes to the Ammonia Plan to increase the efficacy of the enzyme additive product or system, or to test alternative products or systems for reducing ammonia emissions by 50% or more. These proposals shall be submitted for EPA's review and approval, in accordance with Paragraphs 27, 4, 5, and 6, supra, and any approved proposal for achieving the required ammonia emission reduction, where appropriate, shall again be bench scale tested under this Paragraph.

29. Within sixty (60) days of EPA's approval of any revisions to the Ammonia Plan, or EPA's written confirmation that no changes are required, Defendants shall commence application of the enzyme additive product or system in one layer barn with a deep-pit manure management system as selected in the approved Ammonia Plan, and shall commence emissions testing at that layer barn using the secondary testing method described in Exhibit 2 hereto, for a period of six (6) continuous months that shall include the month of August 2004. Defendants shall simultaneously commence emission testing using the secondary method at a control barn selected in the Ammonia Plan of comparable design, age, chicken population, and other relevant parameters. A summary of the validated data, in spreadsheet format, obtained during the secondary emission testing shall be electronically submitted to EPA on a monthly basis throughout the emission testing period. This testing may be conducted at the same time as the testing required in Paragraph 11.

30. Within sixty (60) days of completion of the secondary method emissions testing required in Paragraph 29, supra, Defendants shall submit the test results to EPA. Defendants shall also submit at this time any proposed changes to the Ammonia Plan to increase the efficacy of the enzyme additive products or controls or to propose alternative ammonia controls and testing protocols for EPA's review and approval, in accordance with Paragraphs 27, 4, 5, and 6, supra.

31. Within sixty (60) days of EPA's approval of any revisions to the Ammonia Plan or EPA's written confirmation that no changes are required, Defendants shall commence use of the approved ammonia emissions products or controls at all operational layer barns subject to this Section II.B, in accordance with the approved Ammonia Plan and applicable manufacturer instructions and guidelines for the use of such products or controls, and shall continue the use of

such products or controls at all operational layer barns at those locations until one of the following conditions is met:

- a. EPA approves in writing an alternative ammonia control system to be implemented in lieu of the previously approved ammonia controls ;
 - b. A layer barn is closed and no longer houses poultry. Any such closure must be completed in accordance with all applicable federal, state and local requirements. If Defendants at any time intend to reopen or replace one or more closed barns, they must notify EPA, ODA and OEPA in writing of this plan prior to reopening, and may not reopen any of the closed barns or construct replacement barns without use of the ammonia control system approved by EPA. This provision does not apply to temporary barn closures of less than twelve (12) weeks in duration due to normal operational practices, such as replacement of old layers, routine maintenance and repair, replacement of equipment, clean-out, disease, or infection;
 - c. The Consent Decree is terminated in accordance with the provisions thereof.;
- or
- d. A federal agency determines that the operation of the enzyme additive products or controls may be harmful to human health, worker safety, the environment, or the poultry, and that the enzyme additive products or controls should no longer be used. Within thirty (30) days of such a determination, Defendants shall submit a proposed alternative Ammonia Plan, in accordance with Paragraphs 27, 4, 5, and 6, supra.

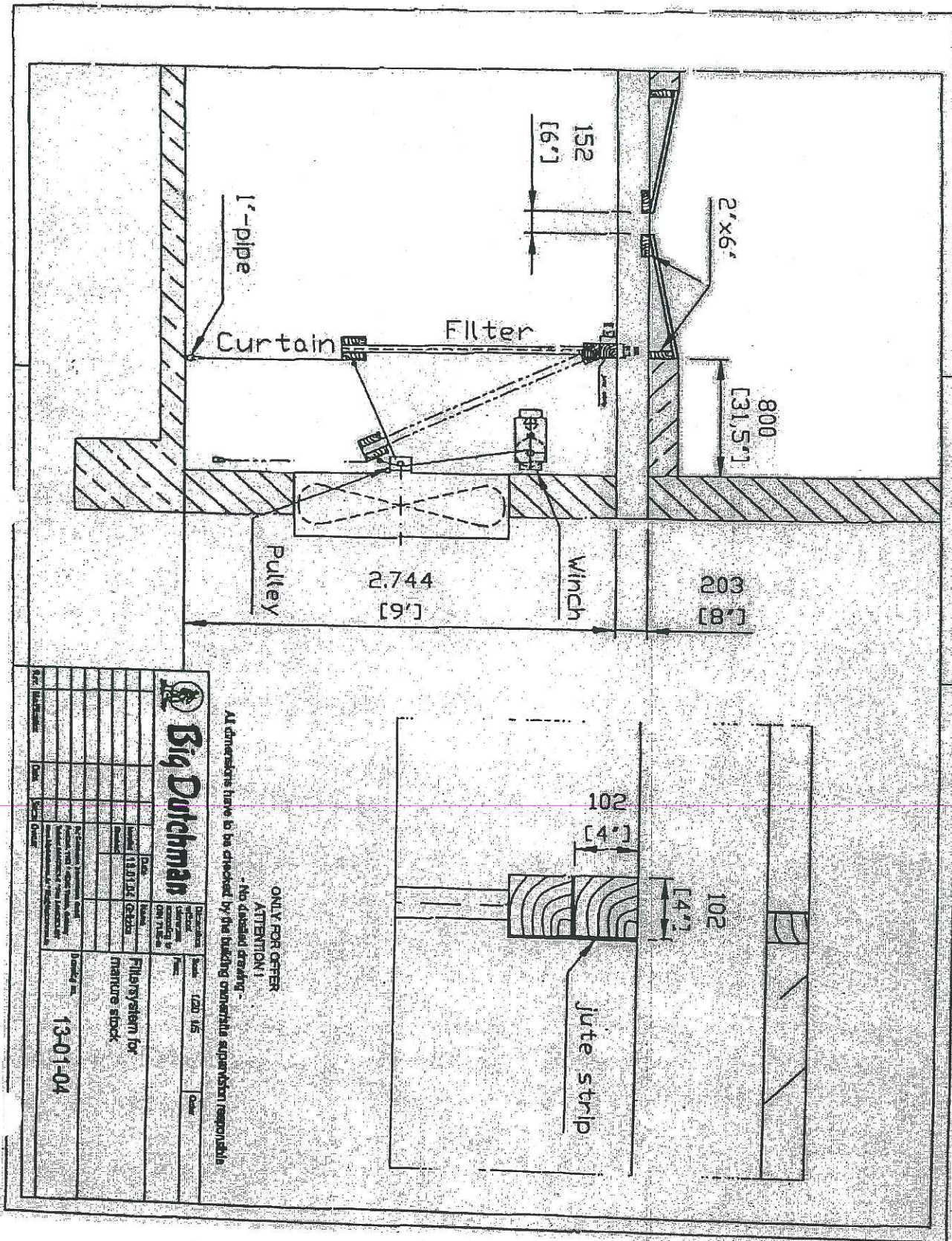
III. REPORTING OBLIGATIONS

32. Defendants must submit quarterly progress reports to EPA beginning April 30, 2004, or such later date as agreed by EPA in writing. Quarterly progress reports must then be submitted in accordance with Section VII of this Consent Decree no later than thirty (30) days after the end of any given quarter (quarters shall end on December 31, March 31, June 30, and September 30 of each year). Each quarterly progress report shall include, at a minimum, the following information, unless otherwise agreed in writing by EPA:

- a. Identification of any operational layer barns to be closed at any of the Croton, Mt. Victory and Marseilles Locations in the following quarter, including the anticipated date of closure, and actions to be taken prior to and during the closure process to control and/or minimize PM and ammonia emissions;
- b. Identification of any layer barns at the Croton Location to be converted to belt battery manure handling systems during the next quarter, pursuant to the permits issued by ODA on December 23, 2003 or modified or re-issued thereafter, including the anticipated date of conversion, and actions to be taken prior to and during the conversion process to control and/or minimize PM and ammonia emissions;

- c. Particulate Impaction System installation schedule for each Location for the following quarter;
- d. Particulate Impaction System visual inspection and dust removal frequency;
- e. Particulate Impaction System dust removal and disposal practices;
- f. Particulate Impaction System maintenance, repairs, and/or replacement;
- g. Impacts of Particulate Impaction System on building ventilation;
- h. Any building fan operation data collected by Defendants;
- i. Changes in chicken populations over the prior quarter (including the number of barns converted to new variety and/or feed);
- j. Use of additional PM reduction practices, if any, in combination with the Particulate Impaction System; and
- k. Dates of use of enzyme additive to control ammonia emissions in each operational layer barn, and the amounts used during each application.

Exhibit 1 **General Particulate Impaction System Design**



2

Exhibit 2 General Quality Assurance Project Plan

Project Description

This sampling entails an approach to measure pollutant emissions directly at the source. It will use a dust sampling system to monitor the concentrations of PM and PM₁₀ in the exhaust fans and the air inlets of a large caged-hen laying house.

PM and PM₁₀ will be sampled using a vacuum pump, 10 critical orifices each and, for PM₁₀, 10 PM₁₀ preseparator/cassette filter holder assemblies. The samples will be weighed using standard protocol for gravimetric analysis.

In addition, concentrations of carbon dioxide (CO₂) will be measured using a 0-5,000 ppm photoacoustic infrared carbon dioxide analyzer. The accuracy of this analyzer will be ± 100 ppm. The measurement range will be set at 0-5,000 ppm. The measurement of CO₂ is intended to obtain data that will be useful to monitor the mass (gas) transportation and (spatial and temporal) distribution in the building, to study the indoor air quality and to validate the measurement of PM₁₀.

The airflow rates of selected ventilation fans will be estimated by using a portable fan test chamber. The building ventilation rate will be obtained by monitoring the operation of all the fans and the airflow rate of a single fan, since all the ventilation fans are identical. The PM emission rates will be calculated by multiplying the measured concentrations by the airflow rates.

Finally, concentrations of ammonia will be measured using a chemiluminescence ammonia analyzer or similar instrumentation. The ammonia analyzer's measurement range will be set at representative concentrations (ppm), depending on the levels in the building. It will have a lower detectable limit of 1 ppm. Its precision will be 2.0% or better of full scale and the 0 to 90% response time will be 120 s with 10 s averaging.

Quality Objectives and Criteria for Measurement Data

The overall data quality objective is to generate data of sufficient quality to satisfy the objectives of the project stated above. Data will undergo quality assurance review which will assess, among other things, representativeness, completeness, comparability, and accuracy and precision.

Data representativeness will be assured by the overall sampling design, which includes high frequency and multi-location sampling and a week-long measurement period.

Data completeness will be achieved by assuring that valid data obtained from the measurement system will be no less than 90 percent of the scheduled sampling.

Data comparability will be maintained by consistent use of the same analytical methods used in recent studies in confined swine facilities.

Accuracy and precision for the PM and PM₁₀ measurement will be assessed in accordance with the equipment manufacturer's instructions included with required equipment. The filter weighing balance must be calibrated at least annually.

Accuracy and precision for the carbon dioxide measurement will be assessed by challenging the measurement system with zero air and a known concentration of carbon dioxide (CO₂) span gas. Carbon dioxide concentration measurement will be performed in accordance with the equipment's instruction manual.

Accuracy and precision of the NH₃ measurement will be assessed by challenging the measurement system with zero air, a known concentration of NH₃ span gas (dual-certified by NIST-traceable gravimetric formulation and analysis based on vendor reference standard), and a known concentration of NIST-traceable nitric oxide (NO) span gas. Ammonia concentration measurement will be performed in accordance with the instrument manufacturer's recommendations.

Failure to achieve any of the acceptance criteria will trigger an immediate examination of sampling and/or analytical practices in order to correct the problem before the next round of scheduled sampling.

Documents and Records

Field logs will be maintained and include, but not be limited to, site drawings, daily notes, monitoring notes, results of in-field quality control checks, and any deviations from this quality assurance project plan.

Field test documentation and electronic data storage will be maintained in accordance with the standard operating procedures.

Records resulting from this project will be retained for a period of not less than three years.

MEASUREMENT DATA ACQUISITION

Sampling Process Design (Experimental Design)

Measurements of ammonia and CO₂ will be conducted sequentially at multiple locations to obtain gas emission rates, and temporal and spatial variations of gas concentrations. A gas sampling system will be constructed to allow automatic sequential air sampling from three groups of sampling locations. Teflon tubes (1/4" ID) will be used to transport air from nine exhaust locations (Group 1 - four fans on the west side of the building and Group 2 - five fans on the east side of the building) and four air inlets (Group 3) in the ceiling. A filter will be installed at the opening head of each gas sampling line at the sampling location to remove particulate. The selected gas stream will pass through Teflon sampling manifolds.

A vacuum pump (P1) will pull air from the sampling locations to the concentration analyzers. The sample gas stream from each group will be measured continuously for 10 minutes before switching to another sampling group. The first nine minutes of gas concentration data will be ignored to allow the measurement system to equilibrate. The measurement of the three groups of sampling locations will need 30 minutes. Thus, 48 CO₂ measurements will be obtained daily for each group. These data with 30 minute time resolution will allow analyzing the temporal variations of the gas concentrations. Gas emission rates will be calculated using concentration differences between groups (Group 1 vs Group 3 and Group 2 vs. Group 3) combined with ventilation rate.

A second set of gas analyzers will be set up to focus on spatial variations of gas concentrations. The measurement will be divided into two periods. At the first period, it will be measuring each of the 12 sampling locations (excluding one fan in Group 2) measured by the first set of analyzers. The 12 locations will be measured sequentially. Measurement at each location will take 10 minutes and it will need two hours to measure all locations. Thus, 12 concentration readings will be obtained daily. The data will be used to study the concentration variations within each group of sampling locations to validate the selection of these locations.

At the second period, the second set of gas analyzers will be measuring only two locations to determine both spatial and temporal variations. Some of these locations will be at the floor to determine the portion of air pollutants produced by the birds on the second floor as compared to the manure stored on the first floor. The selection of the two locations will be determined upon the completion of the first measurement period and based on the data at hand at that time.

PM and PM₁₀ will be sampled once every day for 24 hours at eight exhaust fans, side by side with continuous emissions monitoring system (CEMS) sampling points, and one incoming air location using a nine-port manifold connected to a vacuum pump system. The sampling location will be 10 centimeters adjacent to the CEMS sampling location to ensure free flow of air around the sampling head. A fractionating inlet will be utilized at each point.

Twelve semiconductor sensors will be used to measure temperatures at the gas and dust sampling locations (eight exhaust fans and four air inlets). The sensors will be calibrated prior to use and recalibrated at the conclusion of the test. An electronic relative humidity/temperature probe will monitor outdoor relative humidity and air temperature. Another relative humidity/temperature probe will be used to monitor indoor relative humidity and an additional air temperature at the center of the manure pit. Building static pressure will be monitored at four locations representing east, west, north and south sides of the building.

The wall fans will be tested with a portable fan test chamber to determine their actual airflow rates at different static pressures. Their operation will be monitored with voltage-sensing relays.

Sample Handling and Custody

PM and PM₁₀ filter samples will be taken using 47-mm filter cassettes. The filters will be equilibrated at a set temperature ($20 \pm 1^\circ\text{C}$) and relative humidity ($50 \pm 5\%$) for at least 24 hours prior to pre-and post-weighing, and weighed using standard protocol for gravimetric analysis.

Samples will be labeled and logged in on standard field data sheets at the time of placing and collecting the samples. The samples will then be transferred directly to the laboratory for weighing or stored for later weighing. Information on the data sheets includes date, time of day, personnel, sampling location, airflow rate, sampling start time, sampling stop time, temperature, any unusual conditions or observations, weight of pre-sampling, weight of post-sampling, and PM concentration. All field data will be recorded and checked for completeness and accuracy before leaving the site. Laboratory data sheets will be prepared and signed as samples are processed. The samples remain in the custody of sampling personnel at all times precluding the need for chain of custody documentation.

All other measurement will be taken in-situ in the buildings and no sample custody will be involved.

Analytical Methods

Approved analytical methods will be used in all experiments. Analytical data will be generated in accordance with the standard operating procedures and instrument manufacturer's manuals.

The sampling team will undertake corrective actions for gas and particulate concentration measurement. Corrective action will be necessitated by any deviation from published procedure or instruction manual direction.

Quality Control

Quality assurance and quality control at all facilities includes the use of properly maintained and reliable instrumentation, approved analytical methodologies and standard operating procedures, external validation of data, well-trained analysts, electrical backups, audits, and documentation. When appropriate, published EPA analytical methodologies will be used. Logs will be maintained for each instrument.

Quality control procedures will include the following:

- Calibrations of ammonia and carbon dioxide analyzers will be conducted regularly.
- On-line results of all the continuous measurement variables will be displayed on a PC screen. Sampling personnel will check the on-line display daily by either remote or on-site access.
- Logged data files in the PC in the previous day will be checked the next business day to find and correct any problem with the system.
- Experienced analysts will run all equipment.
- Internal performance and system audits will be performed.

- A measurement of inlet clean air will be included as a field blank for gas concentration measurement.
- An uninterrupted power system will be used to prevent equipment damage in case of power failure.

Instrument/Equipment Calibration and Frequency

Gas concentration analyzers will be calibrated in accordance with the manufacturer's instruction manuals. Certifications for calibration gases will include two analyses at least one week apart. The certified calibration gases will consist of zero air and a representative upper limit concentration for ammonia gases as well as carbon dioxide in nitrogen. Calibrations of ammonia and carbon dioxide analyzers will be conducted weekly.

Gas airflows of the PM and PM₁₀ samplers will be calibrated using precision airflow calibrators (0.020-6 Lpm and 2-30 Lpm flow rates). Calibration frequency will be determined in accordance with the manufacturer's instructional manual.

Calibration records will be maintained in accordance with the applicable standard operating procedure or instrument manufacturer's operation manuals.

Inspection/Acceptance of Supplies and Consumables

All atmospheric gaseous measurement will be traceable to dual-analyzed and certified standards from a reputable supplier. No additional requirements are applicable.

Data Management

Instrumental data will be collected and stored in accordance with the applicable standard operating procedure or instrument manufacturer's operations manual. Raw data will be saved as tab delimited ASCII files.

All temperature and relative humidity data will be electronically stored and compiled in a manner that will facilitate computation of 30-minute and daily averages.

Sampling personnel will keep the following logs: daily notes including site drawings, deviations from QA, and other notations. The logs will contain measurement activities and monitoring notes. A third party witness will sign and date all log notes. All notes will be contained in a centralized notebook. All necessary records for additional monitoring instruments will also be kept.

A large portion of the data will also be maintained electronically in the form of spreadsheets. Electronic raw data and computer records will be backed-up weekly on a network drive (backed-up daily) with copies stored at the laboratory. In addition to computer storage, raw tables or graphs will be printed out and stored in a loose-leaf notebook in the laboratory.

Assessments and Response Actions

Sampling personnel will be responsible for evaluating the data and assessing the data in accordance with validation procedures. They will assess the data for their representativeness, completeness, comparability, and accuracy and precision as outlined in a previous section.

Sampling personnel will also be responsible for preparing the portions of a report concerning the results from their respective instrumentation. They will integrate the data and jointly prepare a draft measurement report for review.

Reports to be Submitted

The draft and final project reports will contain all valid monitoring data expressed as 30-minute and daily values. The report will incorporate graphical representations of the location of all measurements taken. The report will also contain the numerical and qualitative results of all quality control measures on all measurement systems and will compare them to the applicable acceptance criteria. In the event that data must be invalidated, the reason for data invalidation shall be identified with the resultant corrective action.

Review drafts and final reports will be distributed to, at least:

Kevin Vuilleumier	U.S. EPA, R5
Cary Secrest	U.S. EPA, HQ OECA
Isaac Robinson	OEPA, CDO
Don Waltermeyer	OEPA, NWDO

Data Review, Verification, and Validation

All data generated under this QAPP will be reviewed and validated by sampling personnel. Data quality assessment will be performed by sampling personnel.

Raw data review will be done within two business days after the data were recorded from measurement. Verification of the measurement data will be done during initial processing each week using appropriate software.

Validation and Verification Methods

Data will be validated and verified by comparison with instrumental performance parameters as identified in the applicable standard operating procedure or instrument operation manual. Data validation and verification will also be performed by checking the recorded test activity and change of the building environment. Data will be evaluated for compliance with stated objectives for representativeness, precision, and accuracy. However, the evaluation process used to find and correct an error may not be defined in this QAPP because not all possible errors and corrections can be anticipated.

XVI. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

66. This Consent Decree resolves and constitutes a release of the civil claims of the United States for the violations alleged in the Amended Complaint filed in this action through the date of lodging of the Consent Decree. Provided that Defendants comply with this Consent Decree from the date of lodging of the Consent Decree through its Effective Date, these claims shall also be resolved through the Effective Date of this Consent Decree. Upon EPA's issuance of an Acknowledgment of Completion pursuant to Paragraph 29, these claims shall be finally resolved and released. This Consent Decree shall not be construed to prevent or limit the rights of the United States to obtain penalties or injunctive relief under the CAA or implementing regulations, or under other federal or State laws, regulations, or permit conditions, except as expressly specified herein.

67. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree. Defendants reserve all legal and equitable defenses available to defend against enforcement of the provisions of this Consent Decree.

68. The United States further reserves all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, Defendants' Locations, whether related to the violations addressed in this Consent Decree or otherwise. Defendants reserve all legal and equitable defenses available to defend against such an assertion of any imminent and substantial endangerment.

69. Defendants are responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and Defendants' compliance with this Consent Decree shall be no defense to any action commenced pursuant to said laws, regulations, or permits. The United States does not, by its consent to the entry of this

Reconciliation with User Requirements

Any data not meeting the data quality objectives as outlined above will be flagged as invalid for comparison to screening level criteria.

Exhibit 3

Determination of Annual Emissions

This Exhibit provides a summary of the methodology proposed for determining annual emissions from the Mt. Victory Location and the Croton Location. The data obtained at the Mt. Victory Location will also be extrapolated to determine annual emissions from the Marseilles Location. The methodology provided below is only a representative summary. This summary may be modified based on any final proposal submitted under Attachment A. Any modifications are subject to EPA approval.

Emission data will be collected over a period of six months between August 1, 2004 and February 1, 2005 at two layer barns at the Mt. Victory Location, one with the Particulate Impaction System and/or any other approved PM control system and the enzyme additive system and one without any PM control system and without the enzyme additive system. Bird inventories should remain similar between the control (with Particulate Impaction System and/or any other approved PM control system and enzyme additive system) and uncontrolled (without any PM control system and without enzyme additive system) barns to minimize livestock-related variables. Manure pH, moisture, and any other relevant characteristics will be measured and evaluated for representativeness.

Emission data will also be collected over a period of six months between August 1, 2004 and February 1, 2005 at one layer barn at the Croton Location. This Croton Location barn will be fully converted to a belt battery manure handling system that is in place and operating as well as the new bird variety and feed as provided in the approved PM Plan for the Croton Location. Manure pH, moisture, and any other relevant characteristics will be measured and evaluated for representativeness.

Emission data will be collected in accordance with the secondary method set forth in Exhibit 2 and used to calculate daily average PM and ammonia emission rates. Daily average emission rates will be based on the sum of all emissions calculated for that day. Daily average temperature will be calculated by summing all temperatures for that day obtained by direct readings. Regression analysis (using standard statistical and regression analysis methodology) will then be performed on the daily average emission rates and daily average temperatures calculated above. This analysis will provide the basis for a regression model which shows a relationship between ambient temperature and emission rates for each pollutant. Using the

daily mean temperature determined from historical data recorded at Mansfield, Ohio, the sum of the daily emission rates will provide the annual emissions estimate.

With a sampling period between August 1, 2004 and February 1, 2005 the average monthly temperature of the six month sampling period may be near the expected average monthly temperature of a typical year. Some differences between the actual and historical temperatures are expected, and adjustments will be made using the temperature-emissions correlation.

Fan Curves will be calculated and used to determine airflow based on the length of time fans are operating on a per minute basis. Operation will be monitored through static pressure and recording of each fan operating that minute. Total ventilation for which the fan is capable will be determined using a portable test chamber unit, as set out in Attachment A. The PM and ammonia emission rates shall be calculated, as follows.

Air Flows_{fan-minute} = (fan operating time in percentage of 60-sec operation) X (fan airflow based on derated fan curve and measured static pressure)

PM (NH₃) ER_{minute} = (Average PM (NH₃) Concentration_{minute} lb/dscf) X (summed air flow_{fan-minute} dscf/minute of each fan)

PM (NH₃) ER_{daily} = Summation of PM (NH₃) ER_{minute}

PM (NH₃) ER_{monthly} = Average PM ER_{daily}

Average temperature_{daily} = summation of temperature_{minute}

PM (NH₃) ER_{daily} and average temperature_{daily} recorded at the measurement site will be incorporated in a regression model to extrapolate emissions based on the mean daily temperatures. The model will assume that emission rate is dependent on ambient temperature. A non-linear relationship between temperature and emission rate may exist, thus the sum of the mean daily temperature is preferred to maximize the temporal resolution of the regression model.

Material Safety Data Sheet

U.S. Department of
Labor

May be used to comply with

OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

Occupational Safety and Health
Administration

(Non-Mandatory Form)

Form Approved

OMB No. 1218-0072

IDENTITY (As Used on Label and List)

Eco-Cure Enzyme Product

Note: Blank spaces are not permitted. If any item is not
applicable, or no information is available, the space
must be marked to indicate that.

Section I

Manufacturer's Name Eco-Cure, Inc.	Emergency Telephone Number (415) 924-8450
Address (Number, Street, City, State, and ZIP Code)	Telephone Number for Information (415) 924-8450
1525 Casa Buena Dr. Suite D	Date Prepared June 16, 2001
Corte Madera, Ca 94925	Signature of Preparer (optional)

Section II - Hazard Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
No Hazardous Components No Chemicals				
All ingredience are organic agricultural by-products				
This Enzyme formula has no effect on any living thing				
These Enzymes only accelerate natural degradation				
Process.				

No Hazardous Components No Chemicals
Not Applicable

Section III - Physical/Chemical Characteristics

Boiling Point Not Applicable		Specific Gravity ($H_2O = 1$) Not Applicable	
Vapor Pressure (mm Hg.) Not Applicable		Melting Point Not Applicable	
Vapor Density (AIR = 1) Not Applicable		Evaporation Rate (Butyl Acetate = 1) That of Water	
Solubility in Water Yes			
Appearance and Odor Black in color, Brown when mixed in water No odor			

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) Non-Flammable	Flammable Limits Non-Flammable	LEL non-App	UEL Non-App
Extinguishing Media Water			
Special Fire Fighting Procedures None			

Unusual Fire and Explosion Hazards None			

(Reproduce locally)

OSHA 174, Sept. 1985

Section V - Reactivity Data

Stability	Yes	Unstable	No	Conditions to Avoid	Extreme Heat
-----		Stable	Yes		-----
Incompatibility (Materials to Avoid) Very High levels of Insecticides May reduce product performance					
Hazardous Decomposition or Byproducts None					
Hazardous Polymerization	May Occur	No	Conditions to Avoid	None	
No	Will Not Occur	X		-----	

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation?	No Effect	Skin?	No Effect	Ingestion?	No Effect
Health Hazards (Acute and Chronic) No Health Hazards						

Carcinogenicity:	No	NTP?	No	IARC Monographs?	No	OSHA Regulated?
Non-Applicable						
Signs and Symptoms of Exposure None						

Medical Conditions Generally Aggravated by Exposure None						

Emergency and First Aid Procedures No special Procedures						

Section VII - Precautions for Safe Handling and Use

No unsafe Procedures. However, for effective implementation of product: Keep Enzymes out of direct sun-light while in the poly bags they came in, and away from water until ready for use, water activates enzymes.

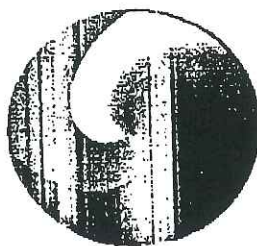
Steps to Be Taken in Case Material is Released or Spilled	
No Special procedures, Product Non-hazardous	

Waste Disposal Method	Add to waste material, or Soil

Precautions to Be taken in Handling and Storing	Avoid Extreme Heat, Keep
Product out of direct sun-light when in the poly bags	
Other Precautions	they came in, away from water until ready to use,
water activates the enzymes.	

Section VIII - Control Measures

Respiratory Protection (Specify Type)		
non-applicable		
Ventilation	Local Exhaust	Special
no special	no special	none
	Mechanical (General)	Other
	Non-applicable	none
Protective Gloves	Eye Protection	
no	none special	
Other Protective Clothing or Equipment		
None		
Work/Hygienic Practices		
No special		



Eco-Cure, Inc.

"They treat, we cure"

Procedure for implementing enzymes is as follows:

Within A nylon sock place $\frac{1}{2}$ ounce Eco-Cure per 1 gallon of water first treatment, $\frac{1}{2}$ ounce Eco-Cure per gallon on subsequent treatments.

Suspend Enzymes in A sock in hot water 95° Fahrenheit and allow water temperature to reduce to ambient condition for 5 to 8 hours, Enzymes must be applied to waste material within 12 hours of exposure to water. A lid on bucket retains heat longer.

Within soaking time, squeeze sock several times in order to make a stronger "tea". Pour "tea", enzyme solution into spray container and apply lightly to waste material. Where possible the key is to mix thoroughly.

Reapply once a week.

Keep dried enzymes out of direct sun-light and away from water until ready for use, water activates enzymes.

For liquid waste use same procedure as above, except no spray container necessary simply pour enzyme solution into waste solution. The ratio of enzyme solution to liquid waste is 1 part enzyme solution to 99 parts liquid waste.

Contact Information

Eco-Cure, Inc.

1525 Casa Buena Drive Suite D

Corte Madera, California, 94925

Chairman/CEO Jim Kritchever

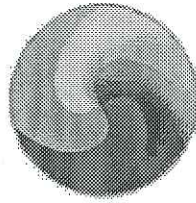
Phone/Fax 1-415-924-8450

jimkritchever@yahoo.com

[Click here to send us an instant message](#)

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Eco-Cure, Inc.



Eco-Cure, Inc. has developed an effective proprietary formula for the rapid degradation of animal waste, and biosolid material, as well as petroleum hydrocarbons.

This "enzyme activator" combining bacteria and fungi with extracellular enzymes allows the processing of various organic materials into high-quality soil amendment and fertilizer. By degrading up to 90% of manure, it there-by makes the highest concentration of NPK and nutrients possible.

It will also within the process eliminate the odor [ammonia, hydrogen sulfide gas] associated with waste material, on contact. In addition, the enzyme formula will bring about the destruction of all pathogens and salmonella within hours of an aerobic condition.

Our formula is completely harmless to all living things, contains no chemicals, and no ingredient in our product appears on OSHA's "Directors List". The USDA has no restrictions on the use of our product.

The enzyme formula has proven extremely effective in the reduction of BOD (Biological Oxygen Demand) in sewage waste water. Reducing up to 80% of BOD after 5 hours of treatment and the "destruction" of 20% of solids in a 7 hour period.

The enzyme activator's ability to degrade petroleum hydrocarbons was discovered accidentally when a quantity of the enzymes was stored on an asphalt driveway. When the enzymes were transferred, it was noted that the tar underneath had been degraded and stone pebbles were the only remaining material.

The first experimental attempt to degrade a petroleum product was conducted with aged smudge pots from Dole Citrus in Redlands, California. Cow manure was used as a medium to which both the oil and the enzyme activator were added. The manure provided cellulose or food to the mix to allow the rapid population growth of the bacteria. The oil was digested in the process. This initial experiment degraded the oil/manure mixture from an initial 630,000 ppm tph to non-detectable levels within an 11-week period.

Since that time, numerous tests, both laboratory and field, as well as contracted jobs, have been completed and have proven the dramatic elimination of various hazardous and toxic substances including pesticides and PCB's. Bench testing of this product is continuing to investigate aspects of the degradation process.

[click here to go back to main menu](#)

Eco-Cure Inc.

Reports/Testimonials

Animal Waste Odor Control

Waste Water Treatment

Hazardous Waste Clean Up

Material Safety Data Sheet

[click here to go back to main menu](#)

Eco-Cure Inc.

Animal Waste Odor Control

Nucal Foods-Ets Lab Report

Maine Contract Farming

ISE Newberry-Hahn Lab Report

Rose Acre Farms

Milton G Waldbaum (Michaels Foods)

Aguajitos Avocados, Ltd

Cal -Maine Foods Watkinsville ,GA Pilot Project, by Nipcam Group

[Click Here To Go Back To The Reports/ Testimonials Menu](#)

**Corporate Office:**

NuCal Foods, Inc. • P.O. Box 1386 • Salida, CA 95368

(209) 545-1988 • Fax (209) 545-2977 • Customer Service (800) 377-3447

Petaluma Division:

NuCal Foods, Inc. • P.O. Box 750307 • Petaluma, CA 94952

(707) 795-8937 • Fax (707) 778-0486 • Customer Service (800) 398-3447

May 1, 2000

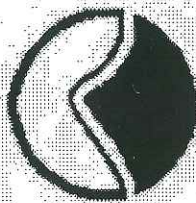
To whom it may concern:

I witnessed Eco-Cure degrade 6,000 pounds of chicken manure, 6 to 8 months old, dried hard and compact degraded into 1,000 pounds of odorless organic fertilizer over a period of four months.

My partner Arnie Riebli also witnessed different but equally dramatic results when 1000 pounds of fresh hot chicken manure was treated by Eco-Cure's enzymes and found after 20 minutes of exposure a dramatic reduct of the ammonia odor.

A handwritten signature in dark ink, appearing to read 'Dick Weber', is written over a light-colored background.

Dick Weber



ETS

1343 Redwood Way
Petaluma, CA 94954
(707) 795-9605/FAX 795-9384

Environmental
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Technical Support

Serving people and the environment so that both benefit.

CLIENT: Eco-Cure, Inc., 1525 Casa Buena Drive, Suite D, Corte Madera, CA 94925
ATTN: Jim Kritchever

SITE LOCATION: facilities in Marin

[NuCal Foods, Inc., Santa Rosa Egg Farms]

ANALYST(S) SUPERVISOR
J. Carlbay D. Jacobson
R. Conrad LAB DIRECTOR
G. Conrad PhD

DATE RECEIVED COMPLETED
3/29/00 4/14/00

LAB SAMPLE NUMBER	SAMPLE ID	COMPOST TYPE	ORGANIC MATTER/ASH %	CARBON NITROGEN RATIO	ECa (Elec Cond) mmhos/cm	pH -log[H+]	REDOX POTENTIAL mv	MOISTURE & SATURATION %
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00-03-0421	EC2/CM*	Chicken Man.	34.63/15.37	23.86	19.46	7.69	190.8	32.66/39.63
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LAB SAMPLE NUMBER	SAMPLE ID	COMPOST TYPE	TOTAL NITROGEN TKN (%)	ORGANIC NITROGEN Norg	AMMONIA-N NH3-N ppm	NITRATE-N NO3-N ppm	TOTAL PHOSPHOROUS Ptot (%)	TOTAL POTASSIUM Ktot (%)
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00-03-0421	EC2/CM*	Chicken Man.	2.05 [20.543]	2.02	250	5	0.39 [3885]	5.20 [52.000]
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MERCO JOINT VENTURE, LLC.

EAGLE LAND MANAGEMENT, INC., Managing Member

May 15, 2000

Via Facsimile @ 415-924-8450

Mr. Jamie Kritchever
Eco-Cure, Inc.,
1525 Casa Buena Drive
Corte Madera CA 94925

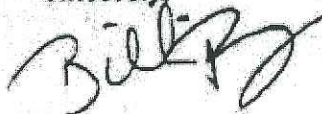
Dear Mr. Kritchever:

This will serve to confirm our invitation to visit with myself and Merco's senior technical staff at our biosolids beneficial land application site at our Sierra Blanca Ranch, Sierra Blanca, Texas on Wednesday through Friday May 17-May 19, 2000.

The purpose of the meeting will be for Merco to evaluate Eco-Cure's technologies and to conduct a limited test of the effect of your formula on the treatment of class B biosolids.

We understand you will arrive at the El Paso airport at 1:55 p.m. mountain time on Southwest airlines. As I mentioned we will arrange for your accommodations while you stay at Sierra Blanca Ranch. I look forward to our meeting.

Sincerely,



William E Iorio

New York Office:
265 Sunrise Highway, Suite 37
Rockville Centre, NY 11570
516-255-0707

Wayne Office:
1285 Drummers Lane, Suite 102
Wayne, PA 19087
810-293-0533



ORANGE COUNTY SANITATION DISTRICT

February 17, 2003

Eco-Cure, Inc.

Dear Jim,

On Monday February 10th I had the opportunity to trial the Eco-Cure sample you sent me. I understand that the Product has been shown to be effective for the removal of ammonia (NH₃-N), grease & oil, hydrogen sulfide (H₂S) and chlorinated hydrocarbons.

I decided to test Eco-Cure's effectiveness for the removal of 300 to 400 parts per million (ppm) ammonia from the Districts belt filter press (BFP) filtrate discharge. The sample was taken from the upper pan discharge of a Plant No. 2 belt press, which contains the highest concentration of ammonia. No washwater is included in this point of BFP discharge.

One-half ounce (approximately 14 grams) of Eco-Cure was added to a nylon sack and suspended in a gallon of 95°F tap water and mixed for four hours. The tea produced is roughly equivalent to 3500 ppm of the original Eco-Cure sample.

Four one-Liter portions of the filtrate, including a control were mixed on a mixing table for three hours. The initial analyses for ammonia ranged from 330-360 ppm.

Sampling over the first four hours showed no significant ammonia reduction. However, a modest improvement was detected in the fourth hour analysis of the sample with 40 mL of the Eco-Cure solution, the highest dose of Eco-Cure.

The table below shows that the sixteen-hour results are exciting. Obviously significant ammonia reduction was achieved well before the morning testing.

Sixteen Hour NH ₃ -N Results: sample # 1(Control)				
	# 2	# 3	# 4	
Dose of diluted Eco-Cure in mL	0 ppm	40 mL	20 mL	4 mL
Dose of diluted Eco-Cure in ppm	0 ppm	140 ppm	70 ppm	14 ppm
NH ₃ -N 16 hr. Concentration in ppm	330 ppm	0.7 ppm	1.5 ppm	3 ppm

I'm looking forward to establishing optimum time and dosing for the BFP filtrate ammonia reduction. Also I intend to explore the use of Eco-Cure in trunklines, anaerobic digesters and secondary treatment for the elimination or reduction of the constituents named above.

Thank you,

Gregg T. Pamson
Gregg T. Pamson
Operations Scientist

phone:
(714) 962-2411

mailing address:
P.O. Box 8127
Fountain Valley, CA
92708-8127

street address:
10844 Ellis Avenue
Fountain Valley, CA
92708-7018

Member Agencies

Cities

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Santa Ana
Seal Beach
Stanton
Tustin
Villa Park
Yorba Linda

County of Orange

Sanitary Districts

Costa Mesa
Midway City

Water Districts

Irvine Ranch

*Maine Contract Farming, LLC
PO Box 219
Turner, Maine 04282*

**Barn 41
Eco-Cure Trial**

Date	High NH3	Manure Level	Fly Count
3-5-01	15	31 in.	
3-8-01	5		
3-14-01	7		
3-20-01	5		
3-21-01	4		
3-27-01	1		
4-5-01	1	27 in	
4-24-01	28		
5-7-01	5		
5-17-01	6	25 in.	
5-24-01	7	24 in.	
6-28	4	23	

We have initiated a test of Eco-Cure in one of our deep pit barns. The barn is 48 ft. wide by 680 ft. long and contains brown hens. At the beginning of the test the barn had 31 inches of manure existing and ammonia readings of 15ppm. One month into the test, we have 27 inches of manure, which has crusted and is drying well and ammonia levels of less than 1ppm. The barn is sprayed weekly with 10 gallons of mix at a ratio of .5 oz Eco-Cure per gallon of water.

We are using a backpack type sprayer and spraying from the operating floor level. We are very pleased with the test to this point and encouraged with the prospects for the future.

Monitoring of the barn for H2S has shown levels at less than 1.5 ppm on a consistent basis. These measurements were taken approximately 18 inches above the manure pile.



ISE NEWBERRY INC.

Date: 05-06-03

To the Eco-Cure Company:

Just a note on the performance of the Eco-Cure enzyme. We have been using the product now starting on our third year. Our eight house laying complex has approximately 750,000 hens on site at all times. Eco-Cure has become a valuable tool in our management program, both for fly control and ammonia reduction.

About one year ago we tried a different enzyme product that was suppose to produce the same results as Eco-Cure- for dollars less. What a disaster! Not only did our fly problems explode but the increase in ammonia odor was substantial. Recently the South Carolina Department Of Health and Environmental Control visited our site and could not believe what little ammonia smell was present. They also noted that there were hardly any flies during their visit.

Our program consists of spraying all the houses on Wednesday afternoon. We mix the Eco-Cure with four gallons of 97 degree water. This is done at 7am, then is applied after lunch. We apply it to our litter using both a backpack power sprayer and also with a hand sprayer. We put minimum ventilation in the houses during application to allow the enzyme to settle on the litter.

We notice an immediate effect on ammonia reduction after application, sometimes within 15 to 30 minutes.

We have combined our fly control with the Eco-cure enzyme. Beneficial insects are added to the pit area and in combination with the enzymes, we have reduced our fly spraying significantly more than offsetting the cost of enzyme. In fact we only spray the upstairs of the laying house when our fly threshold reaches 75. Using the combination of beneficial insects and Eco-Cure has reduced our chemical fly spray costs in half, approximately \$20,000.00 dollars.

Another benefit of Eco-Cure is savings in fuel costs to incinerate the mortality. We have started a compost program using sawdust and Eco-Cure to get rid of our daily mortality. This program is saving us between \$800 to \$1000 per month in propane fuel costs.

AGUAJITOS AVOCADOS, LTD.

P. O. BOX 2267

GOLETA, CALIFORNIA 93118

June 1990

To Whom It May Concern:

I learned of Zymace enzyme plant food during a visit to Kauai Hawaii in 1981. The locals swore that it made their bananas and papayas leap right out of the ground. Lush lawns and gardens just come with the territory in the Hawaiian Islands don't they? Not so they said. I was quite skeptical of the magic bullet claims attributed to this enzyme formula.

Now I know better. Enzymes' amazing properties are widely known in medicine and industry. No snake oil here. It was my experience rather than my education that opened my eyes. I no longer doubt what I've seen.

In just nine weeks a twenty ton pile of fresh chicken manure, treated with a few pounds of enzyme, became odorless rich humus. I'm talking a rank steamy truckload of chicken waste, feathers and egg shells, clouds of methane and ammonia, all processed into lovely black soil. Normally this would take nine months of spreading and turning before such a hot fertilizer would be palatable to plants. There were no more feathers or shells and no flies or maggots in this stuff.

We also witnessed slower but equally dramatic results in our avocado orchards. We introduced enzymes into our irrigation reservoir in which we raise several thousand Koi carp. During the summer months we had water quality problems. Algae bloom caused an oxygen deprivation condition. Our fish asphyxiated. The largest koi were the first to die, as the pond went septic. Increased pond aeration and the enzymes turned the trick for us. Our Koi have grown to 34 inches. The avocado trees benefit from the fish waste emulsion and the enzyme active micro-flora in the soil.

A certain pride comes from packinghouse gradeouts consistently rating our fruit as "above standard". Our friends tell us we grow the best avocados they've tasted. This measure of success has been due in, no small part to Eco-Cure's enzyme formula.

Sincerley yours,

Landon Stableford

LANDON STABLEFORD

805-968-2772

P.O. Box 28
1020 Industrial Dr.
Watkinsville, GA U.S.A.
30677

Facsimile

706-769-9824
800-288-9824
706-769-0096



June 7, 2002

Jim Kritchever
Chairman, C.E.O.
Eco-Cure, Inc.
1525 Casa Buena Drive, Suite D
Corte Madera, CA 94925

Dear Mr. Kritchever:

Our Eco-Cure Enzyme Mixture Project has finished its twelve-week duration but the flocks have several more weeks until they reach maturity and are taken to the laying houses. All of the data will be compiled when the flocks are removed from the house. At this time, a number of conclusions can safely be drawn from the limited field data that we have.

The enclosed graph and the table below show the ammonia levels upstairs and in the pit. By week four the ammonia levels upstairs had dropped to zero and, except for one measurement of 1 ppm in week 7 and one of 7 ppm in week 10, they stayed at zero. The week ten measurement was undoubtedly the result of a large (multi-gallon, eight feet across) water leak. I treated the leak area with the Eco-Cure Enzyme Mixture and within one week the levels upstairs were back to zero. In the manure pit, ammonia levels from week three until week eleven stayed close to zero except for that week eleven water leak which gave us a high of 18 ppm. Even this was reduced to 2 ppm by the following week. These measurements are excellent.

**Eco-Cure Project Data – Ammonia Levels in a High-Rise Pullet House
That Has Been Treated with Eco-Cure (Beginning Day 1 of New Flock)**

Date	Upstairs at Bird Level	In Pit at Ground Level
	Concentration in ppm	Concentration in ppm
2/26/02	40 ppm	72 ppm
3/05/02	15 ppm	55 ppm
3/12/02	2.5 ppm	2.5 ppm
3/19/02	0 ppm	2.5 ppm
3/26/02	0 ppm	2.5 ppm
4/02/02	0 ppm	0 ppm
4/10/02	1 ppm	5 ppm
4/16/02	0 ppm	0 ppm
4/23/02	0 ppm	2 ppm
4/30/02	7 ppm	18 ppm
5/07/02	0 ppm	2 ppm

Note that there was no detectable ammonia at the upstairs bird level at the end of week three and I had to estimate the minimal levels as two to three ppm (2.5 ppm in the table) based on the minimal detection on the Drager tube. In fact, an anecdote should be mentioned here. During the middle of week three a group of visiting dignitaries made an unannounced inspection visit at the facility. When they walked into the center of the bird level (according to the manager) the first thing they all mentioned was the pronounced lack of ammonia smell. They all remarked about the pleasant odor of the facility (which is not something typically noted about chicken houses, to say the least).

The manager told me that she had experienced distinct asthma symptoms during the first couple of months of previous pullet flocks (the birds take 17-20 weeks to mature to egg laying age). With this flock, on the other hand, her symptoms have abated and she has not had the breathing problems she suffered in the past. She has been able to walk through the house without a mouth respirator or even a dust mask and still not experienced a recurrence of asthmatic problems while at work.

While I was in the house, another group of uniformed employees came by to sniff the air. They had heard about the ammonia reduction and wanted to see the results for themselves. I was in the pit applying the spray to the manure surface. The men opened the pit door, walked in and smelled the air. Even though I was able to detect traces of ammonia with the Drager tube detector, the ammonia was so low that none of the men were able to sense it using their noses. They were quite a sight, standing there in the manure pit with their noses elevated sniffing the air. It was a scene worth recording. They repeatedly remarked that they couldn't believe the contrast in conditions with the other houses that they work in.

There was one bad waterer leak in the house during the second week and another during the ninth week of the flock. At week two, a black, anaerobic area about three feet in diameter developed, reeking of hydrogen sulfide. As I treated the manure pit I made sure that I sprayed this area thoroughly. I had stepped in the edge of the black area in my boots, sinking about twelve inches into the swampy mire. A strong hydrogen sulfide rotten egg smell was released. After treating the area with Eco-Cure Enzyme Mixture suspension, the smell was reduced to faint traces of odor at the worst. In fact, by the next week there was no hydrogen sulfide odor at all, despite the continued presence of the black, swampy area. The same thing happened on a much larger scale in the ninth week, resulting in the increased reading in week 10 mentioned above. I am sure that, without these large leaks, we would have seen near zero ammonia levels from week three until the end of the study.

The primary benefit from this reduced ammonia is definitely the enhanced working environment for personnel. They are all more cheerful and have experienced a distinct drop in respiratory problems and complaints. In addition, the ammonia-related damage to ferrous metals such as the cages, supports, feeder mechanisms, etc., has been reduced, which will result in a much longer lifespan for the equipment, better living conditions for the birds, and a reduced possibility of injuries (scratches, cuts) from rusty equipment. All of these factors have subtly enhanced the environment and the attitude of the staff.

An additional, unexpected bonus associated with the odor reduction was a noticeable reduction in flies. There was a direct correlation between house fly numbers and the level of ammonia in the manure pit: reduced ammonia tied in nicely with greatly reduced house fly levels. Despite the two

large leaks that occurred during the study, the house fly population during the last weeks of the project was negligible to none. The reduction in house flies alone resulted in a sizeable savings in pesticides and was a great environmental and occupational benefit to the birds and the personnel in the house. A near absence of house flies means that there will be no fly-related diseases transmitted to the birds, no pestering of the staff by obnoxious flies, and no contact by birds or personnel with pesticides (fogs or space sprays) typically used to handle usual fly levels. No outbreaks of any disease were seen in this flock during the study.

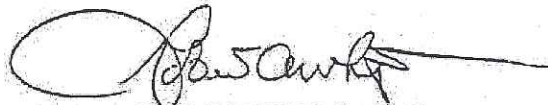
The entire manure pit of the high-rise pullet house was covered in freshly-molted feathers from the previous flock when I applied the first Eco-Cure treatment. Being a born skeptic, I was not too quick to notice any major changes in the appearance of the feathers where I had sprayed. However, it should be noted that, without any prompting by me, the farm manager volunteered that all of her personnel had noticed that a lot of the feathers on the manure had curled up since I had been in the pit. They wanted to know what, if anything, I had done, to help dispose of the feathers on top of the manure. This was especially significant since no new bird manure was deposited on top of the feathers during the first two weeks of the flock (new chicks are kept on chick paper for the first two weeks). Since the feathers stayed very dry during this period, I am sure that effect would have been even more pronounced if the new chick manure had been deposited on top of the feathers or if we had used more water with the Eco-Cure. The Eco-Cure dried almost as it was being applied. Despite this dehydration, the effect of Eco-Cure application were distinct beginning with the first application.

I am in the process of obtaining data from previous flocks concerning mortality, feed conversion, etc. in this high-rise pullet house. Unfortunately, bird performance data from a single house do not always correlate with any one factor. Mortality in this house was higher than expected during the first two weeks of the flock. This period was a cool period, the manure had been allowed to sit for several weeks after a partial cleanout (leaving about one foot of old damp manure), and ventilation was at an absolute minimum for the new chicks. This resulted in higher than expected ammonia levels for the first two weeks. Approximately 4.6% of the flock died in the first two weeks and only 1.1% died during the remaining nine weeks. This is well within the expected range for this time of year. In fact, from week three through week eleven the mortality was less than the adjacent house that had not been treated with Eco-Cure!

I also applied about 1/2 to one gallon of Eco-Cure Enzyme Mixture suspension to the dead bird pit at weeks two, four and six. To my surprise, the strong dead bird pit odor began to dissipate each time as I sprayed. The odor was reduced dramatically. I am sure that the depth of disposed material was the only thing preventing further odor reduction. The pit height shrank approximately one to two feet the first week after I treated it and about 1/2 to one foot each following treatment. The feathers turned rapidly from white to brown and the fly levels dropped considerably. The farm staff remarked during the week following each treatment that they had noticed a dramatic reduction in dead pit bird odor and were now able to place new mortality in the pit without becoming nauseous from the smell. An interesting observation during the dead bird treatment was that the fly larvae covering the carcasses moved rapidly away from the Eco-Cure as it was applied to the pit. Adult flies were not affected by direct contact with the spray but maggots of a number of fly species moved away from every spot sprayed with Eco-Cure. The Eco-Cure exceeded all my expectations.

As an aside, I have been visiting another farm that has been using Eco-Cure for several months in their pits. In at least three houses they decided to try a similar product from another manufacturer. Although I had no idea which treatment was being used in each particular house, the Eco-Cure houses were obvious the moment that I entered the pits. They had no ammonia smell while the houses treated with the other material took my breath away. This farm has since announced that they are going back to Eco-Cure because it works so well and makes the farm personnel so much more agreeable when they are asked to perform duties in the manure pits.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. A. White, Jr.', with a large, stylized loop at the beginning and a long horizontal stroke extending to the right.

Robert A. White, Jr., Ph.D.
Entomologist, NIPCAM



AMERICAN REFINING GROUP

LUBRICANTS AND SPECIALTY PRODUCTS DIVISION

18 July 2003

Bioremediation of Oil contaminated Soil using Eco-Cure Enzymes.

Reference: "Bioremediation of Oil Contaminated Soil Using Eco-Cure Enzymes" dated 16 October 2002

The referenced report detailed an earlier study using Eco-Cure enzymes to eliminate hydrocarbons from contaminated soil. Although the test successfully demonstrated the ability of Eco-Cure to reduce TPH concentrations in soil there were some anomalies that were related to testing procedures and possibly age of the Eco-Cure enzymes.

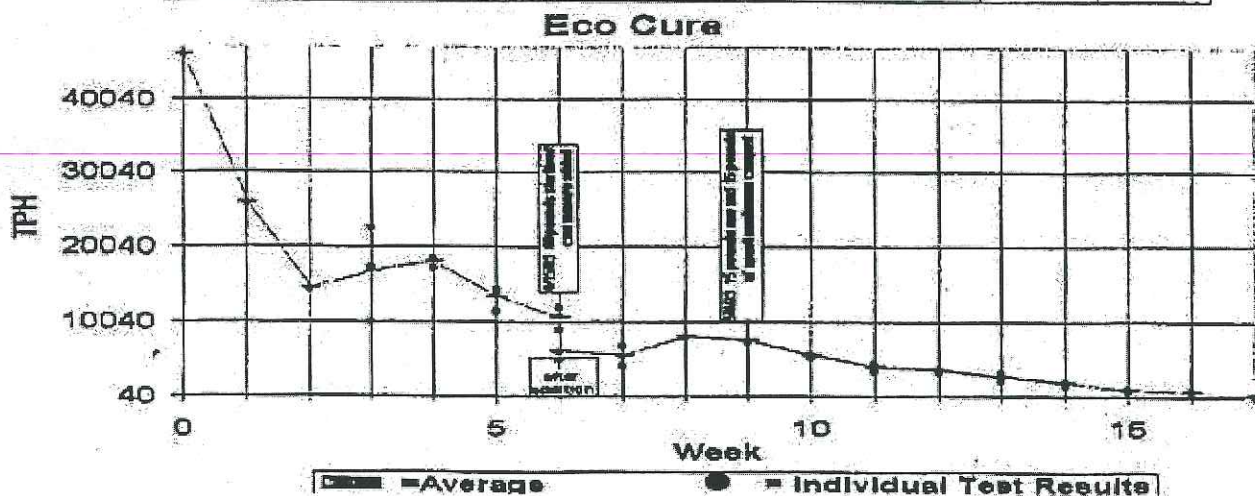
A repeat of the study was initiated on February 28, 2003. A test soil was prepared by mixing 20 pounds of gravel with 25 pounds of sand and 45 pounds of a top soil. To that mixture was added 5 pounds of a 150 SUS mineral oil and 30 pounds of mushroom compost.

The mixture was treated weekly with an Eco-Cure enzyme solution prepared using 1 oz of Eco-Cure/gallon of de-chlorinated water. TPH was measured weekly using SM 5520F test procedure.

The TPH data are summarized below:

Week	0	1	2	3	4	5	6	7	8
TPH (PPM)	46030	25749	14258	13615	17834	13243	6043	5370	7876

9	10	11	12	13	14	15	16	17
7403	5331	3898	3359	2555	1671	811	566	<50





ISE NEWBERRY INC.

Applying Eco-Cure to our litter has also significantly reduced the volume of litter under our high rise houses. About 25% reduction in volume has been noted during the cleanout of the houses. Enclosed is a recent litter analysis of a treated house for the past 14 months.

We originally used Eco-Cure to help reduce the ammonia in the laying houses. All the extra benefits, fly reduction, propane fuel savings, fly chemical savings and litter volume reduction, have added value to our operation.

Feel free to contact me at 803-276-5294.

Regards,

A handwritten signature in dark ink, appearing to read "Doug Heydt". The signature is stylized with a large "D" and a long horizontal stroke.

Doug Heydt-ISE Complex Manager



ISE NEWBERRY INC.

April 16, 2001

To: Jim Kritcheuer

From: Doug Heydt
Complex Manager
ISE Newberry
Silverstreet, SC

Dear Mr. Kritcheuer:

We started applying the Eco-Cure product to two of our laying houses, the first of February. An immediate reduction in the ammonia smell was noticed. After two weeks the feathers also started to show signs of deterioration. The litter piles in the two initial houses also have not increased in volume nearly as fast as the two older flocks.

After seeing the results in the first two houses. We started to apply the product to two more laying houses. The same results have been observed- reduction in ammonia smell, feather deterioration and litter pile decomposition.

Presently we spray all litter lines in every house. We use 4 oz. of product per week per house. Takes one-half hour per house to apply the product.

Lenny Martinez, Production Manager, states, "The Eco-Cure product seems to be very effective, particularly in the area of smell reduction. Plans are favorable for its continued use."

Sincerely,

Doug Heydt
Complex Manager

HAHN LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS
1114 Main Street P. O. Box 1117
Columbia, SC 29201 Columbia, SC 29202
PHONE: (803) 799-1814

REPORT OF ANALYSIS

ANALYSIS NO. 74 8234

DATE 3-26-01

FOR Use America
Newberry, SC

SAMPLE OF #4 Chicken Manure RECEIVED 3-15

HENS Youngest Birds

Dry Basis

Moisture	77.4%
Nitrogen	5.79%
Phosphorus (as P ₂ O ₅)	5.18%
Potassium (as K ₂ O)	3.61%

Respectfully Submitted,
HAHN LABORATORIES, INC.

By *Frank M. Hahn*
President

[Click Here To Go Back To The Animal Waste Odor Control Menu](#)



P.O. BOX 1250
SEYMOUR, IN 47
(812) 497-2557
FAX (812) 497-33
www.roseacre.com

June 5, 2001

Eco-Cure, Inc.
Mr. Jim Kritchever, CEO
1525 Casa Buena Drive
Suite D
Corte Madera, CA 94925

Dear Mr. Kritchever:

First I would like to thank you for allowing us the opportunity to evaluate your product, Eco-Cure.

As we began the evaluation the only location that we had was in a portion of our compost storage building. This was not fair for the odor removal properties of Eco-cure. As there are many different odors that compost creates as I am sure you are aware of.

We wanted to evaluate this product first with direct application to manure and without any turning of the manure. Within the first week we noticed a crusting of the pile. This continued through the second week.

Also between the first and second week we noticed that the insects that typically infest the manure piles such as beetles and some flies were not on this pile of manure. This was very impressive.

While we are still evaluating this product we are encouraged by the lack of insects after the first weeks application.

As an accident prevented further testing on these two piles we plan to begin again and will turn the manure with this evaluation.

Again I thank you for the communication and commitment you have to our business.

Sincerely,

Chips Everhart
Environmental Quality Control
Rose Acre Farms

B & D Poultry

Contract grower for Milton G Waldbaum

Jim,

Thanks for your recent shipment of Eco-Cure. As you know we are using your product in a high rise poultry operation with 120,000 laying hens. The product has performed remarkably to this point. There has been a significant decrease in the ammonia smell in that building compared to the others. We have used your product for approximately 5 months and are expecting better shell quality and decreased death loss because of the decrease in ammonia.

Thanks for your product,
B & D Poultry
Brian Van Vuuren, President
Corsica, SD 57328

Phone: 1-605-946-5211

01-29-02

[Click Here To Go Back To The Animal Waste Odor Control Menu](#)

DEGRADATION OF PETROLEUM HYDROCARBONS IN EXCAVATED SOILS VIA ENZYME ACTIVATED COMPOSTING FOR BIOREMEDIATION

By
LeRoy Moore
and

Unitek Environmental Consultants, Inc.

Abstract

During 1991, Unitek Environmental Consultants, Inc. (UEC) performed site assessment and site remediation of a 1.2 square hectare city block in downtown Honolulu, Hawaii destined for commercial and residential development. Site investigative activities identified approximately 3135 cubic meters of surface/subsurface soils exhibiting a mean concentration of total petroleum hydrocarbons (TPH) as oil at ~2000 ppm.

Regulatory guidelines for the project site were established by the State of Hawaii Department of Health under the authority of the United States Environmental Protection Agency. A target cleanup goal of less than 50 ppm was established by the Department of Health for TPH concentrations in soils for Hawaii. As TPH concentrations in soils at the site exceeded this regulatory target goal, remediation was deemed necessary prior the initiation of construction activities at the site. Due to land constraints which required on-site treatment of the contaminated soils, a short term treatment option was necessary to conform with construction scheduling. Under these constraints, bioremediation was selected as the remedial option due to limited treatment space and because construction scheduling required project completion within five months. Bioremediation of these soils, via enzyme activated composting, was conducted for a period of four months. Following this period, final confirmation analysis indicated concentrations of TPH as oil at levels less than 50 ppm thereby obtaining the regulatory cleanup goal.

Introduction

The Queen Emmalani Tower project site consists of a single 1.2 square hectare city block in downtown Honolulu, Hawaii (Plates 1 and 2). During 1991, Unitek Environmental Consultants, Inc. (UEC) was retained by the project site's developer to perform site assessment and site remediation of identified contaminants. Prior to UEC's involvement with the project, all aboveground structures and subsurface foundations had been removed as part of planned development. Site history research by UEC identified various businesses that stored or used petroleum products as part of their operations as early as 1887. These businesses included a U.S. Navy kerosene warehouse, a printing business, and various automotive service stations. Upon completion of environmental activities, construction activities were to be initiated for the development of a 45-story tower designed for commercial and residential use.

During site investigative activities, 34 soil borings were advanced and 17 monitoring wells were installed. A total of 105 soil samples and 9 groundwater samples were collected for laboratory analysis (UEC, 1991a). As a result of this investigation, one major area of approximately 3135 cubic meters of surface/subsurface soils exhibited elevated concentrations of total petroleum hydrocarbons (TPH) as oil. These concentrations ranged from 110 ppm to 13,300 ppm with an arithmetic mean of 2008 ppm. Additionally, TPH as gasoline was also detected in one sample at 314.9 ppm. The lateral extent of TPH gasoline in soil was delineated laterally within a 4.5 meter radius and vertically to a depth of 1.5 meters below grade. TPH gasoline in soils was present

concurrently with elevated concentrations of TPH as oil. Analysis of groundwater samples collected during this investigation indicated that groundwater had not been impacted by identified petroleum constituents.

Based on site history information and the field relationship of identified petroleum hydrocarbons, the presence of petroleum constituents was determined to be the result of surface releases and not the result of a release from a leaking underground storage tank. This interpretation was further supported by the lack of petroleum contamination of groundwater at the site. This interpretation was recognized by the State of Hawaii Department of Health, Hazard Evaluation and Emergency Response Branch (the implementing regulatory agency).

Treatment Selection

Three potential treatment options were considered for remediation of the subject soils to obtain the target cleanup goal of less than 50 ppm TPH:

Landfarming:

While landfarming would likely be effective for the more volatile constituent of TPH as gasoline, it was not considered effective for short term remediation of oil or diesel fuel. Landfarming of oil contaminated soils typically requires an extended time frame of six or more months for bacterial growth and contaminant breakdown. As a result, landfarming was not considered a favorable remediation method.

Low Temperature Incineration:

Low temperature incineration entails the heating of soil to approximately 371° Celsius to volatilize petroleum hydrocarbon constituents. The volatilized hydrocarbons are then collected in a catalytic converter. This remediation has been utilized successfully in many areas of the United States, however, it had not been previously engaged in Hawaii and permits required for this remediation method had not been issued. Hence, low temperature incineration, although a viable technology, was not an option.

Bioremediation:

Bioremediation involves the degradation of hydrocarbon compounds via organic activity. This technology has been used extensively throughout the United States for the treatment of hydrocarbon soil contamination. Furthermore, bioremediation had been successfully employed in Hawaii for petroleum hydrocarbon remediation. The process requires approximately 12 to 16 weeks. Based on these factors, bioremediation was selected for the treatment of the contaminated soil.

The bioremediation process selected for this project entailed enzyme activated composting. Bertoldi, et al. (1990) have presented documentation of degradation of oily wastes and insecticides by composting. They found rates of degradation to be from 3 to 15 times higher for composting as opposed to traditional land farming. Stay, et al. (1990) and Wickham, et al. (1991) also reported a successful use of composting for the remediation of petroleum hydrocarbons in soils. Furthermore, this process was used successfully to remediate a total of 1,550 cubic yards of hydrocarbon contaminated

soils at the Waterpark Towers project in Honolulu, Hawaii (UEC, 1990b; UEC 1990c; UEC 1991d). Soil types remediated at the Waterpark Towers project in general were similar to soil types encountered at the Queen Emmalani Tower site further indicating suitability of this type of treatment.

Treatment Background

The bioremediation process utilized a proprietary formula combining several classes of extracellular enzymes, bacteria, and fungi (Enzyme Activator) to degrade hydrocarbon products in soils. The process was originally developed by a agronomist for the production of high grade fertilizer and soil amendment and is based on general principals of composting. General aspects of this composting process entail the following:

1. Contaminated soils are arrayed in windrows in a manner that allows for porosity and concomitant inclusion of oxygen within the composting mass.
2. Adequate supplies of nitrogen, phosphorus, and carbon (cow manure) are added to encourage active bacterial metabolism.
3. Sufficient moisture is included to promote bacterial activity without moistening the windrow to the point of compaction and reduced porosity. Moisture through the windrow is generally in the range of 30 to 40 percent depending on the structural nature of the composting material.
4. Adequate mass is necessary to provide sufficient insulation to allow retention of the heat generated during fermentation. Temperatures reach between 50° to 55° Celsius. This temperature provides optimum conditions for thermophilic bacterial digestion.
5. Periodic mixing, moistening, and nitrifying (Enzyme Activator) is employed to maintain the physical and biological characteristics of the composting pile.

Enzyme activation of a composting medium has been found to be an effective stimulus to microbial metabolism (Wickham et al. 1991). Indigenous and inoculated bacteria are stimulated by the enzyme activator and thus biodegrade hydrocarbons through the process of co-metabolism and co-oxidation producing byproducts of carbon dioxide and water.

Enzyme enhanced composting involves fermentation that depends on carbon added as a bulking agent and nutrient source. Manure, or other suitable cellulose sources, represent ideal additives as they provides both bulking and nutrients. Hydrocarbon compounds present in contaminated soils are secondary co-metabolites and are readily

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A total of three sampling events were performed during this process. These sampling events were designed to document contaminant degradation during bioremediation activities and to determine when this treatment had obtained the project cleanup goals. At each sampling event, an imaginary sampling grid consisting of 25 possible sampling points was superimposed over the subject soil piles (Plates 4, 5 and 6). In general, a total of eight sampling points were randomly chosen from the possible 25. Random sample locations were generated utilizing File Maker Pro® computer software. The selection of simple random sampling was considered appropriate as soil piles following soil mixing during excavation and bioremediation activities were considered to be relatively homogeneous with respect to TPH contamination. Samples from the first six locations chosen were collected and analyzed for TPH as gasoline and oil. The remaining two samples were archived and not analyzed. Laboratory analysis of archived samples would be performed for statistical purposes if necessary. In addition to this sample collection, one quality assurance/quality control (QA/QC) sample for data comparison was collected from the subject soil piles and submitted for laboratory analysis during sample events 2 and 3.

At each sample location, approximately 0.6 meters of soil was removed with a clean shovel prior to sample collection (Figure 1). As the windrow height at each sample location varied and as the windrows were remixed on a weekly basis, this procedure allowed for a representative, three-dimensional sampling routine. Samples were then collected by driving a pre-cleaned (triple washed in an industrial detergent and water mixture, double-rinsed in de-ionized water, air dried, and baked at 83° Celsius) brass cylinder into a freshly exposed soil face with a mallet. Upon removal, the ends of the cylinder were covered with Teflon® tape, sealed with tight fitting plastic caps, and secured with duct tape. Samples were then labeled, placed on ice, recorded on a chain-of-custody record, and delivered to the laboratory on the day of collection for analysis.

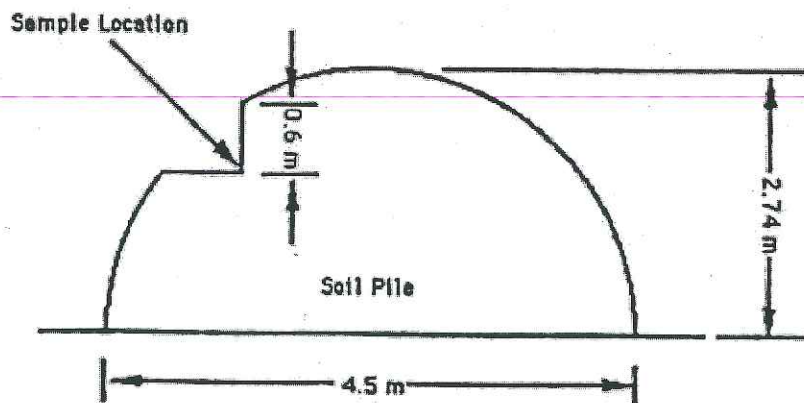


Figure 1
Soil Sample Collection

Data Presentation

Sample Event 1

On July 17, 1991, six weeks after initial treatment, a total of five samples were collected from the windrowed soils for laboratory analysis (Plate 4). Samples from the first five locations chosen were analyzed for TPH gasoline via EPA method 3550/modified 8015 and TPH oil via EPA method 418.1 (UEC, 1991e). Laboratory analysis of these samples indicated a mean concentration of TPH oil at 2,020 ppm and highly weathered volatile petroleum hydrocarbons quantified as gasoline at a mean concentration of 37.6 ppm (Table 1).

TABLE 1
Results of Laboratory Analysis
Sample Event 1

<u>Sample No.</u>	<u>Date</u>	<u>Matrix</u>	<u>TPH Oil</u> (418.1)	<u>TPH Gas</u> (8015M)
7188-201	7/17/91	Bio Soil	2,000	26*
7188-202	7/17/91	Bio Soil	1,400	14*
7188-203	7/17/91	Bio Soil	2,700	21*
7188-204	7/17/91	Bio Soil	2,100	104*
7188-205	7/17/91	Bio Soil	1,900	23*

* Highly weathered volatile petroleum hydrocarbons detected, quantified as gasoline
Results presented in parts per million

Based on this information, the analytical procedure for TPH oil was considered suspect. Initial concentrations of TPH oil in the subject soils prior to remediation activities exhibited a mean concentration of 2,008 ppm. The subject soils had undergone six weeks of bioremediation and as such concentrations of TPH oil were expected to have declined significantly. However, TPH oil concentrations obtained from Sample Event 1 revealed a mean of 2,020 ppm. This situation was discussed with laboratory personnel. Based on this input, it was determined that Method 418.1 is subject to interference by organic matter, silt and clay-sized particles. Therefore, elevated concentrations of TPH oil would be reported in bioremediated soil samples analyzed via 418.1 due to the presence of biological lipids inherent in soils containing the cellulose mixture. Laboratory personnel suggested TPH oil analysis via method 503E. This method is identical to 418.1, however; after preparation of the sample for analysis, detection can be performed gravimetrically. The gravimetric method of detection does not analyze most volatiles and semi-volatiles giving the best determination of non-volatile petroleum.

Sample Event 2

On September 2, 1991, the bioremediated soils were resampled. A total of nine samples were collected during this activity (Plate 5). Samples from the first six locations chosen were analyzed for TPH gasoline via EPA method 3550/modified 8015 and TPH oil via EPA method 418.1, 503E/5520 and 3550/ Modified 8015 (Table 2). A duplicate sample was also collected and submitted for analysis. Two samples of manure were also

obtained from the manure source. These manure samples were collected for comparison of TPH oil analytical methodologies. This comparison was designed to indicate which TPH oil analysis provided minimal laboratory interference.

TABLE 2
Results of Laboratory Analysis
Sample Event 2

<u>Sample No.</u>	<u>Date</u>	<u>Matrix</u>	<u>TPH Oil</u> (418.1)	<u>TPH Oil</u> (503E)	<u>TPH Oil</u> (8015M)	<u>TPH Gas</u> (8015M)
7188-301	9/2/91	Manure	380	ND<80	1,000	ND<10
7188-302	9/2/91	Manure	690	308	1,800	ND<100
7188-303	9/2/91	Bio Soil	1,000	90	600	ND<10
7188-304	9/2/91	Bio Soil	2,100	339	600	ND<10
7188-304D	9/2/91	Bio Soil	1,900	284	350	ND<10
7188-305	9/2/91	Bio Soil	1,300	330	740	ND<10
7188-306	9/2/91	Bio Soil	1,200	ND<60	720	ND<10
7188-307	9/2/91	Bio Soil	1,400	326	650	ND<10
7188-308	9/2/91	Bio Soil	1,700	284	570	ND<10

ND = Not detected

Results presented in parts per million

Laboratory analysis of manure and bioremediation soil samples indicated the following mean concentrations of TPH oil:

<u>Sample Matrix</u>	<u>Method 418.1</u> (ppm)	<u>Method 503E</u> (ppm)	<u>Method 8015M</u> (ppm)
Manure	535	154	1400
Bio Soils	1514	212	604

Laboratory analysis of TPH gasoline via EPA method 8015 modified revealed non-detectable concentrations of TPH gasoline. Based on information obtained from laboratory results of both manure and bioremediated soil samples, 503E gravimetric analysis for TPH oil was determined to be the most appropriate methodology for final confirmation sampling. In addition, as TPH gasoline was not detected, laboratory analysis for this constituent was not repeated in future sampling events. As the mean concentration of TPH oil via method 503E/5520 gravimetric remained above the project cleanup goal, the bioremediation process was continued.

Sample Event 3

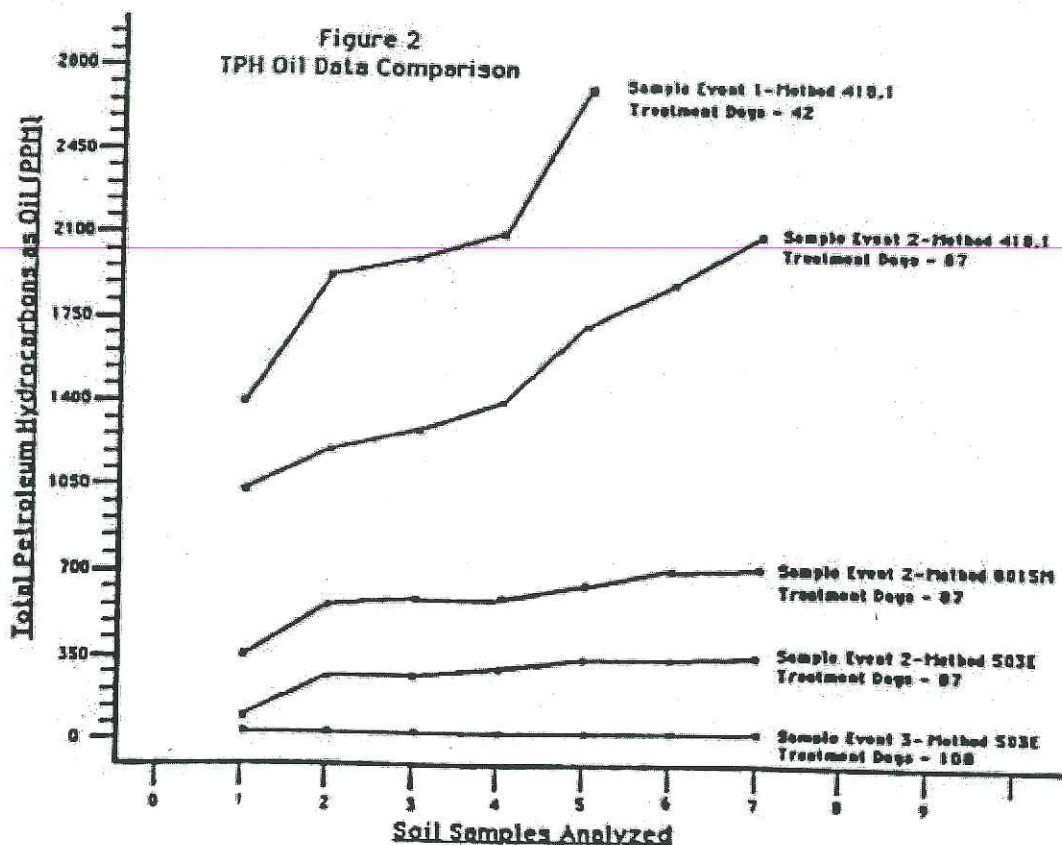
On September 23, 1991, a total of seven samples were collected from the bioremediation soils for laboratory analysis (Plate 6). Samples from the first six locations chosen were analyzed for TPH oil via method 503E. A duplicate QA/QC sample was also collected for laboratory analysis. Analysis of these samples indicated non-detectable concentrations of TPH oil (less than 50 ppm, Table 3) in all samples analyzed. Based on this information, the bioremediation process was determined to have been successful as project cleanup goals of less than 50 ppm had been obtained.

TABLE 3
Results of Laboratory Analysis
Sample Event 3

<u>Sample No.</u>	<u>Date</u>	<u>Matrix</u>	<u>TPH Oil</u> (503E)
7188-501	9/23/91	Bio Soil	ND<50
7188-502	9/23/91	Bio Soil	ND<50
7188-503	9/23/91	Bio Soil	ND<50
7188-504	9/23/91	Bio Soil	ND<50
7188-505	9/23/91	Bio Soil	ND<50
7188-506	9/23/91	Bio Soil	ND<50
7188-506D	9/23/91	Bio Soil	ND<50

Discussion

Based on the results of laboratory analyses performed on soil samples collected from the bioremediation soils, levels of total petroleum hydrocarbons were effectively reduced during the bioremediation process. Laboratory analyses performed on final confirmation samples obtained from the bioremediation soils revealed concentrations of total petroleum hydrocarbons at levels less than 50 ppm obtaining the project cleanup goal. Figure 2 presents a comparison of TPH oil laboratory data obtained from Sample Events 1, 2, and 3.



Reduction of concentrations of TPH as gasoline in the subject soils most likely occurred via aeration during the soil mixing process and, therefore, cannot be attributed to bioremediation. However, as aeration is an integral aspect of the composting process, reduction of this constituent was successful.

Future use of this technology will most likely encounter similar problems of reported concentrations of TPH as oil in collected bioremediation samples. Although laboratory methodology 503E/5520 gravimetric appears to be the best suited laboratory procedure for TPH as oil analysis in bioremediation soils, this methodology may present additional false/positive results with varying soil types and cellulose sources. Future use of this technology should incorporate preliminary laboratory data from the cellulose source and similar soil types (free of petroleum hydrocarbons) to establish baseline data.

This project further indicates the successful treatability of petroleum contaminated soils via enzyme enhanced composting. The project was performed on-site within the allotted time frame of five months and proved cost effective. As this technology does not present a significant air quality problem (compared to low temperature thermal degradation), and requires minimal equipment operation, it may be implemented in areas of stricter regulatory control. This technology can easily be performed at a variety of geographic locations, even remote, due to its minimal use resources. Additionally, as soils following remediation have been significantly enriched by the addition of the cellulose source, these soils can be used as topsoil further reducing overall treatment costs.

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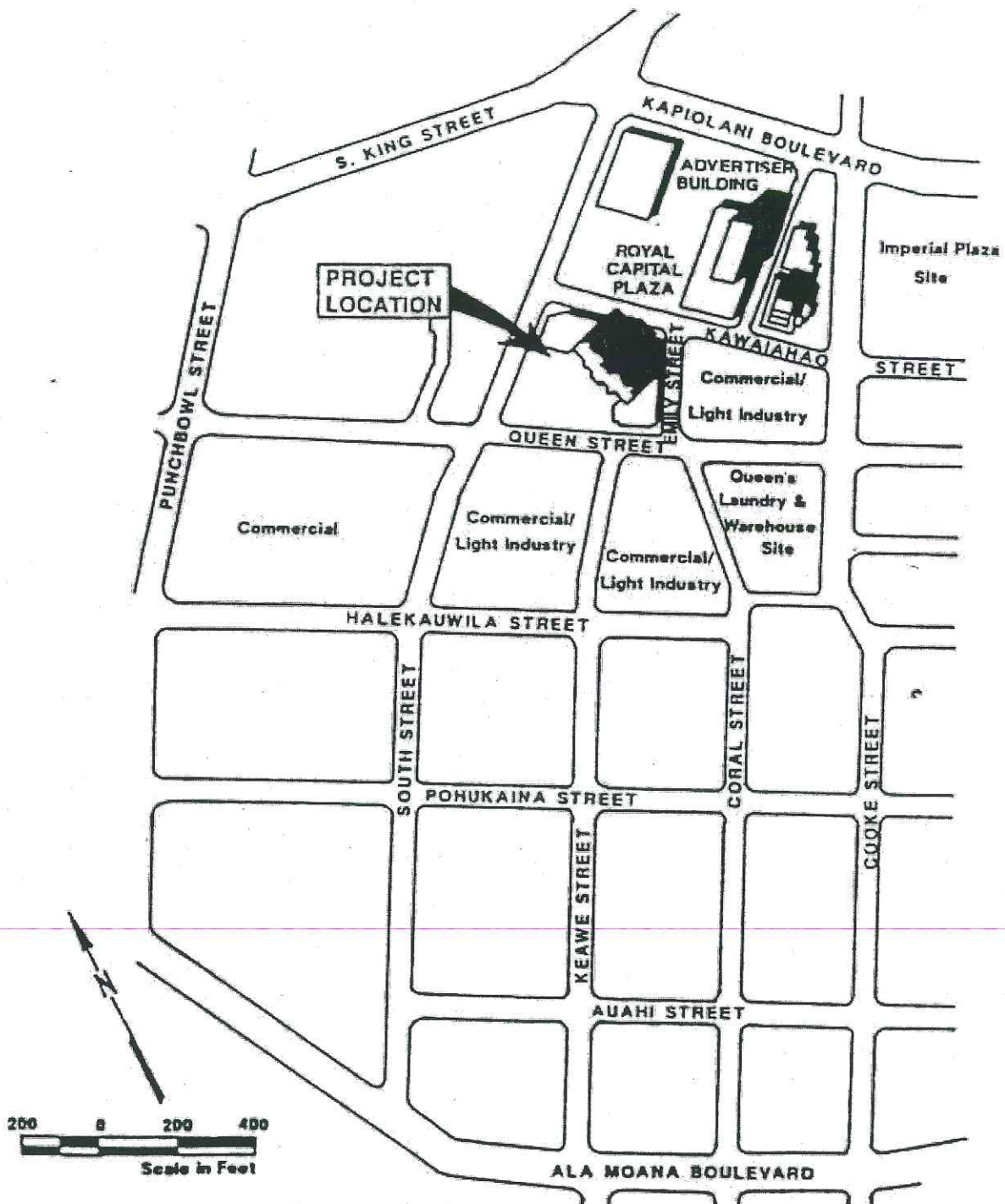
Ref: REDI Real Estate Atlas of Hawaii
First Tax Division
City and County of Honolulu
24th Edition, 1991

LOCATION MAP

Queen Emmalani Tower Site

PLATE 1

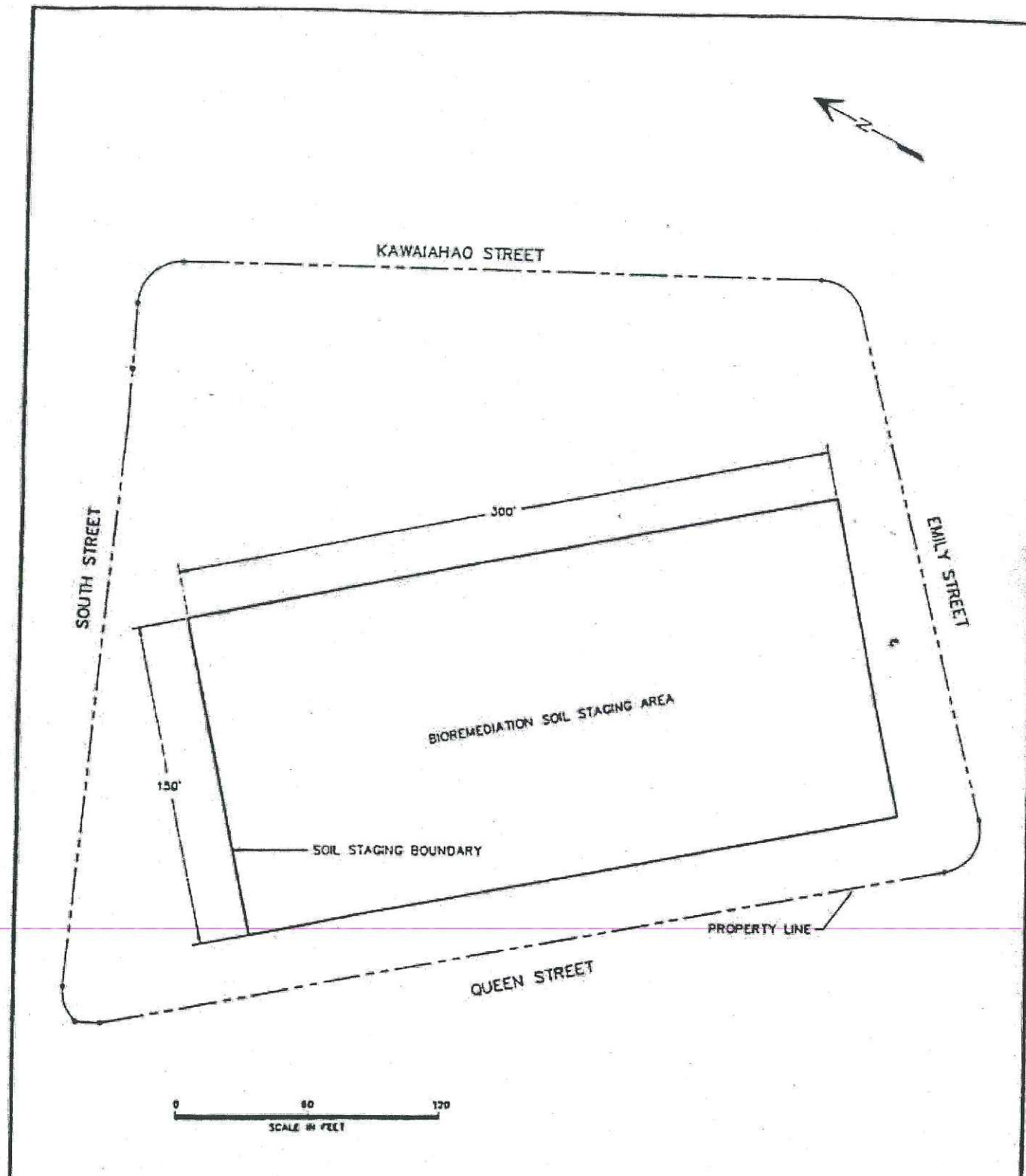
Unitek Environmental Consultants, Inc.
930 Maunaloa Street, Honolulu, Hawaii 96819



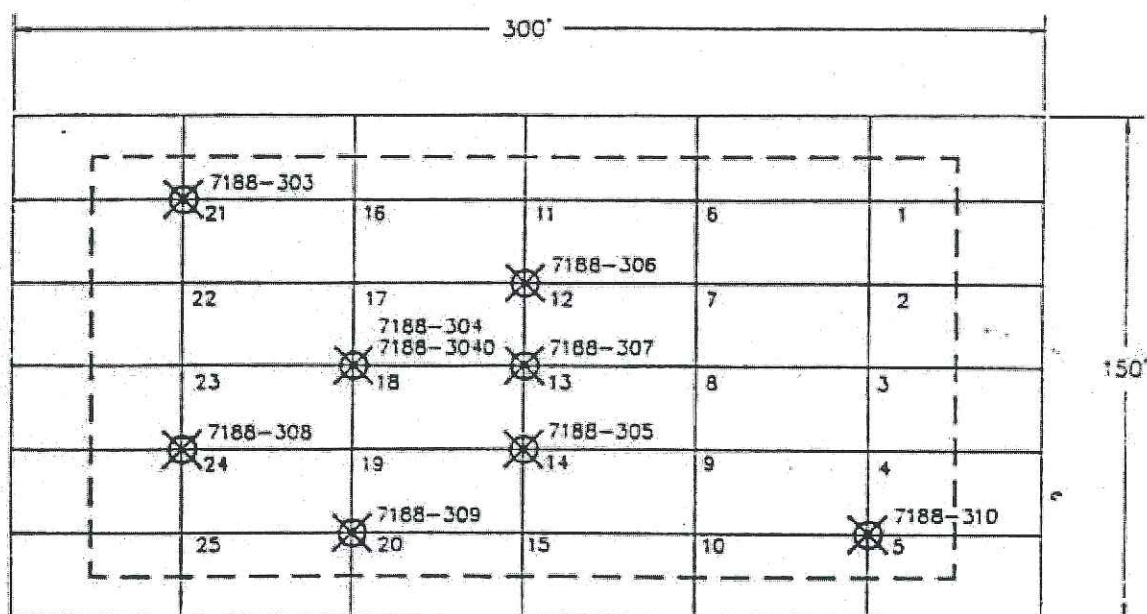
Ref: Kakaako M-P Development

VICINITY MAP

Queen Emmalani Tower Site



SOIL STAGING AREA
Queen Emmalani Tower Site



SAMPLE LOCATION



SOIL PILE PERIMETER

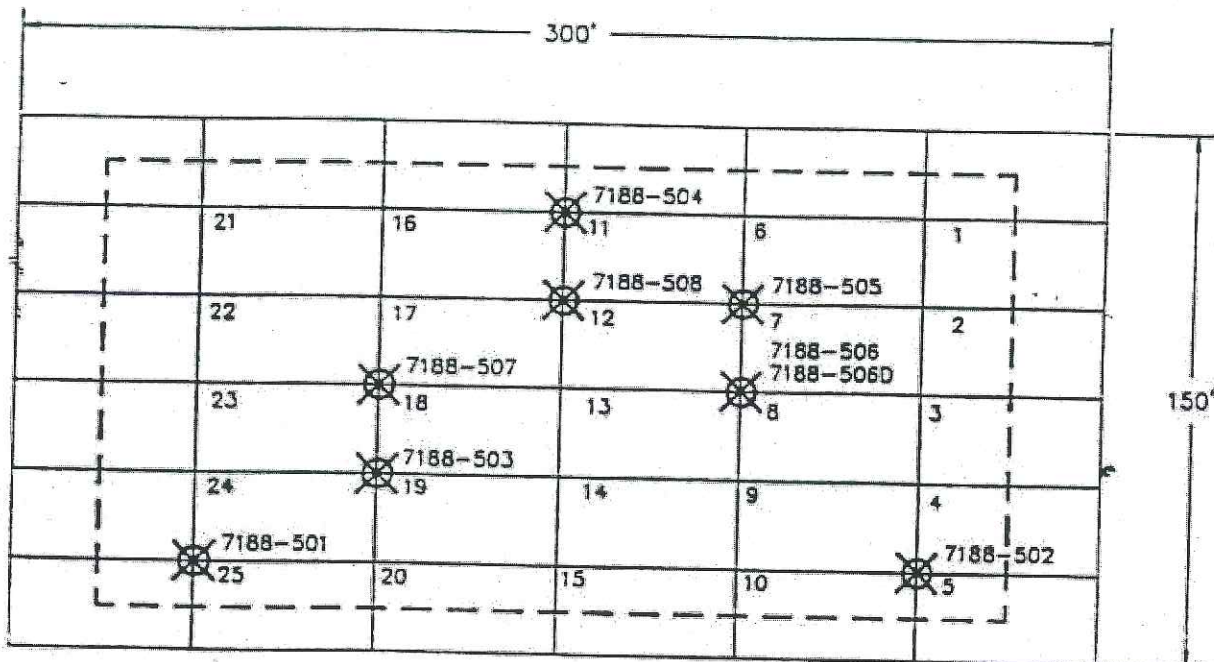


SAMPLE LOCATIONS-SAMPLE EVENT 1

Queen Emmalani Tower Site

PLATE 4

Unitek Environmental Consultants, Inc.
930 Maunaloa Street, Honolulu, Hawaii 96819



⊗ SAMPLE LOCATION
 - - - SOIL PILE PERIMETER

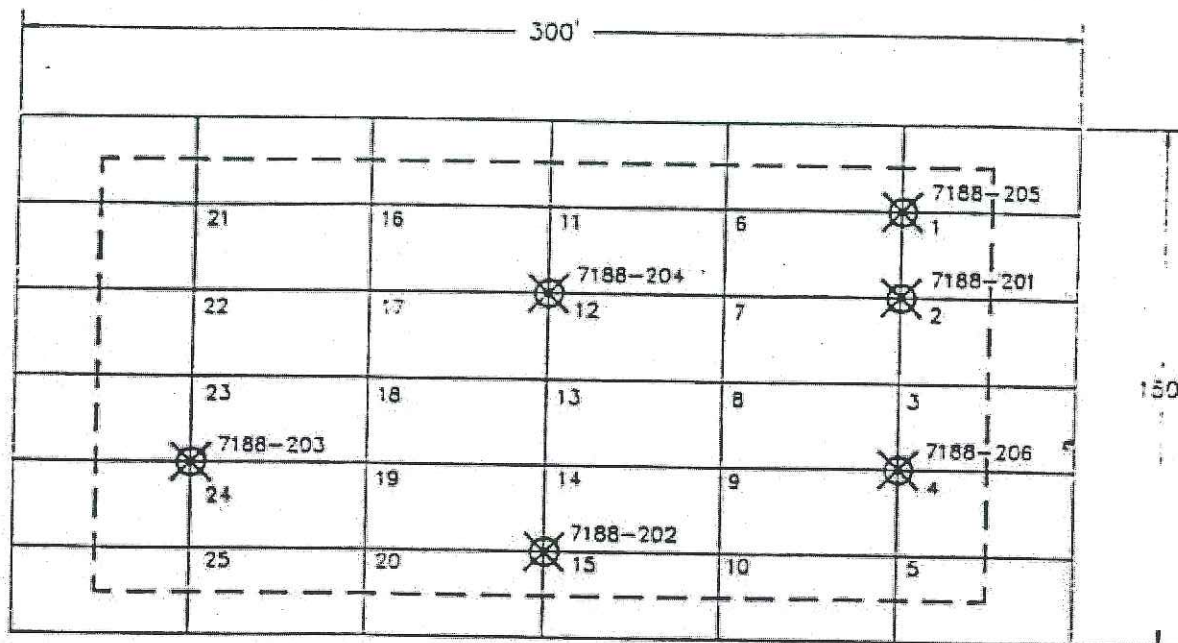



SAMPLE LOCATIONS-SAMPLE EVENT 2

Queen Emmalani Tower Site

PLATE 5

Unitek Environmental Consultants, Inc.
 930 Maunaloa Street, Honolulu, Hawaii 96819



 SAMPLE LOCATION
-- -- SOIL PILE PERIMETER

0 50 100
SCALE IN FEET

SAMPLE LOCATIONS-SAMPLE EVENT 3

Queen Emmalani Tower Site

PLATE 6

Unilek Environmental Consultants, Inc.
930 Maunapuna Street, Honolulu, Hawaii 96819



ORANGE COUNTY SANITATION DISTRICT

February 17, 2003

Eco-Cure, Inc.
Dear Jim,

On Monday February 10th I had the opportunity to trial the Eco-Cure sample you sent me. I understand that the Product has been shown to be effective for the removal of ammonia (NH₃-N), grease & oil, hydrogen sulfide (H₂S) and chlorinated hydrocarbons.

I decided to test Eco-Cure's effectiveness for the removal of 300 to 400 parts per million (ppm) ammonia from the Districts belt filter press (BFP) filtrate discharge. The sample was taken from the upper pan discharge of a Plant No. 2 belt press, which contains the highest concentration of ammonia. No washwater is included in this point of BFP discharge.

One-half ounce (approximately 14 grams) of Eco-Cure was added to a nylon sack and suspended in a gallon of 95°F tap water and mixed for four hours. The tea produced is roughly equivalent to 3500 ppm of the original Eco-Cure sample.

Four one-Liter portions of the filtrate, including a control were mixed on a mixing table for three hours. The initial analyses for ammonia ranged from 330-360 ppm.

Sampling over the first four hours showed no significant ammonia reduction. However, a modest improvement was detected in the fourth hour analysis of the sample with 40 mL of the Eco-Cure solution, the highest dose of Eco-Cure.

The table below shows that the sixteen-hour results are exciting. Obviously significant ammonia reduction was achieved well before the morning testing.

Sixteen Hour NH ₃ -N Results:	sample # 1(Control)	# 2	# 3	# 4
Dose of diluted Eco-Cure in mL	0 ppm	40 mL	20 mL	4 mL
Dose of diluted Eco-Cure in ppm	0 ppm	140 ppm	70 ppm	14 ppm
NH ₃ -N 16 hr. Concentration in ppm	330 ppm	0.7 ppm	1.5 ppm	3 ppm

I'm looking forward to establishing optimum time and dosing for the BFP filtrate ammonia reduction. Also I intend to explore the use of Eco-Cure in trunklines, anaerobic digesters and secondary treatment for the elimination or reduction of the constituents named above.

Thank you,

Gregg T. Pamson
Gregg T. Pamson
Operations Scientist

phone:
(714) 962-2411

mailing address:
P.O. Box 8127
Fountain Valley, CA
92728-8127

street address:
10844 Ellis Avenue
Fountain Valley, CA
92708-7018

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*Maine Contract Farming, LLC
PO Box 219
Turner, Maine 04282*

**Barn 41
Eco-Cure Trial**

Date	High NH3	Manure Level	Fly Count
3-5-01	15	31 in.	
3-8-01	5		
3-14-01	7		
3-20-01	5		
3-21-01	4		
3-27-01	1		
4-5-01	1	27 in	
4-24-01	28		
5-7-01	5		
5-17-01	6	25 in.	
5-24-01	7	24 in.	
6-28	4	23	

We have initiated a test of Eco-Cure in one of our deep pit barns. The barn is 48 ft. wide by 680 ft. long and contains brown hens. At the beginning of the test the barn had 31 inches of manure existing and ammonia readings of 15ppm. One month into the test, we have 27 inches of manure, which has crusted and is drying well and ammonia levels of less than 1ppm. The barn is sprayed weekly with 10 gallons of mix at a ratio of .5 oz Eco-Cure per gallon of water. We are using a backpack type sprayer and spraying from the operating floor level. We are very pleased with the test to this point and encouraged with the prospects for the future.

Monitoring of the barn for H2S has shown levels at less than 1.5 ppm on a consistent basis. These measurements were taken approximately 18 inches above the manure pile.

P.O. Box 28
1020 Industrial Dr.
Warkinsville, GA U.S.A.
30677

706-769-9824
800-288-9824
Facsimile 706-769-0096



June 7, 2002

Jim Kritchever
Chairman, C.E.O.
Eco-Cure, Inc.
1525 Casa Buena Drive, Suite D
Corte Madera, CA 94925

Dear Mr. Kritchever:

Our Eco-Cure Enzyme Mixture Project has finished its twelve-week duration but the flocks have several more weeks until they reach maturity and are taken to the laying houses. All of the data will be compiled when the flocks are removed from the house. At this time, a number of conclusions can safely be drawn from the limited field data that we have.

The enclosed graph and the table below show the ammonia levels upstairs and in the pit. By week four the ammonia levels upstairs had dropped to zero and, except for one measurement of 1 ppm in week 7 and one of 7 ppm in week 10, they stayed at zero. The week ten measurement was undoubtedly the result of a large (multi-gallon, eight feet across) water leak. I treated the leak area with the Eco-Cure Enzyme Mixture and within one week the levels upstairs were back to zero. In the manure pit, ammonia levels from week three until week eleven stayed close to zero except for that week eleven water leak which gave us a high of 18 ppm. Even this was reduced to 2 ppm by the following week. These measurements are excellent.

**Eco-Cure Project Data - Ammonia Levels in a High-Rise Pullet House
That Has Been Treated with Eco-Cure (Beginning Day 1 of New Flock)**

Date	Upstairs at Bird Level	In Pit at Ground Level
	Concentration in ppm	Concentration in ppm
2/26/02	40 ppm	72 ppm
3/05/02	15 ppm	55 ppm
3/12/02	2.5 ppm	2.5 ppm
3/19/02	0 ppm	2.5 ppm
3/26/02	0 ppm	2.5 ppm
4/02/02	0 ppm	0 ppm
4/10/02	1 ppm	5 ppm
4/16/02	0 ppm	0 ppm
4/23/02	0 ppm	2 ppm
4/30/02	7 ppm	18 ppm
5/07/02	0 ppm	2 ppm

Note that there was no detectable ammonia at the upstairs bird level at the end of week three and I had to estimate the minimal levels as two to three ppm (2.5 ppm in the table) based on the minimal detection on the Drager tube. In fact, an anecdote should be mentioned here. During the middle of week three a group of visiting dignitaries made an unannounced inspection visit at the facility. When they walked into the center of the bird level (according to the manager) the first thing they all mentioned was the pronounced lack of ammonia smell. They all remarked about the pleasant odor of the facility (which is not something typically noted about chicken houses, to say the least).

The manager told me that she had experienced distinct asthma symptoms during the first couple of months of previous pullet flocks (the birds take 17-20 weeks to mature to egg laying age). With this flock, on the other hand, her symptoms have abated and she has not had the breathing problems she suffered in the past. She has been able to walk through the house without a mouth respirator or even a dust mask and still not experienced a recurrence of asthmatic problems while at work.

While I was in the house, another group of uniformed employees came by to sniff the air. They had heard about the ammonia reduction and wanted to see the results for themselves. I was in the pit applying the spray to the manure surface. The men opened the pit door, walked in and smelled the air. Even though I was able to detect traces of ammonia with the Drager tube detector, the ammonia was so low that none of the men were able to sense it using their noses. They were quite a sight, standing there in the manure pit with their noses elevated sniffing the air. It was a scene worth recording. They repeatedly remarked that they couldn't believe the contrast in conditions with the other houses that they work in.

There was one bad waterer leak in the house during the second week and another during the ninth week of the flock. At week two, a black, anaerobic area about three feet in diameter developed, reeking of hydrogen sulfide. As I treated the manure pit I made sure that I sprayed this area thoroughly. I had stepped in the edge of the black area in my boots, sinking about twelve inches into the swamplike mire. A strong hydrogen sulfide rotten egg smell was released. After treating the area with Eco-Cure Enzyme Mixture suspension, the smell was reduced to faint traces of odor at the worst. In fact, by the next week there was no hydrogen sulfide odor at all, despite the continued presence of the black, swampy area. The same thing happened on a much larger scale in the ninth week, resulting in the increased reading in week 10 mentioned above. I am sure that, without these large leaks, we would have seen near zero ammonia levels from week three until the end of the study.

The primary benefit from this reduced ammonia is definitely the enhanced working environment for personnel. They are all more cheerful and have experienced a distinct drop in respiratory problems and complaints. In addition, the ammonia-related damage to ferrous metals such as the cages, supports, feeder mechanisms, etc., has been reduced, which will result in a much longer lifespan for the equipment, better living conditions for the birds, and a reduced possibility of injuries (scratches, cuts) from rusty equipment. All of these factors have subtly enhanced the environment and the attitude of the staff.

An additional, unexpected bonus associated with the odor reduction was a noticeable reduction in flies. There was a direct correlation between house fly numbers and the level of ammonia in the manure pit: reduced ammonia tied in nicely with greatly reduced house fly levels. Despite the two

large leaks that occurred during the study, the house fly population during the last weeks of the project was negligible to none. The reduction in house flies alone resulted in a sizeable savings in pesticides and was a great environmental and occupational benefit to the birds and the personnel in the house. A near absence of house flies means that there will be no fly-related diseases transmitted to the birds, no pestering of the staff by obnoxious flies, and no contact by birds or personnel with pesticides (fogs or space sprays) typically used to handle usual fly levels. No outbreaks of any disease were seen in this flock during the study.

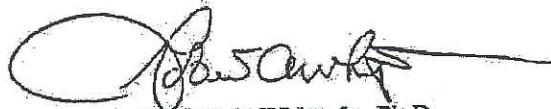
The entire manure pit of the high-rise pullet house was covered in freshly-molted feathers from the previous flock when I applied the first Eco-Cure treatment. Being a born skeptic, I was not too quick to notice any major changes in the appearance of the feathers where I had sprayed. However, it should be noted that, without any prompting by me, the farm manager volunteered that all of her personnel had noticed that a lot of the feathers on the manure had curled up since I had been in the pit. They wanted to know what, if anything, I had done, to help dispose of the feathers on top of the manure. This was especially significant since no new bird manure was deposited on top of the feathers during the first two weeks of the flock (new chicks are kept on chick paper for the first two weeks). Since the feathers stayed very dry during this period, I am sure that effect would have been even more pronounced if the new chick manure had been deposited on top of the feathers or if we had used more water with the Eco-Cure. The Eco-Cure dried almost as it was being applied. Despite this dehydration, the effect of Eco-Cure application were distinct beginning with the first application.

I am in the process of obtaining data from previous flocks concerning mortality, feed conversion, etc. in this high-rise pullet house. Unfortunately, bird performance data from a single house do not always correlate with any one factor. Mortality in this house was higher than expected during the first two weeks of the flock. This period was a cool period, the manure had been allowed to sit for several weeks after a partial cleanout (leaving about one foot of old damp manure), and ventilation was at an absolute minimum for the new chicks. This resulted in higher than expected ammonia levels for the first two weeks. Approximately 4.6% of the flock died in the first two weeks and only 1.1% died during the remaining nine weeks. This is well within the expected range for this time of year. In fact, from week three through week eleven the mortality was less than the adjacent house that had not been treated with Eco-Cure!

I also applied about 1/2 to one gallon of Eco-Cure Enzyme Mixture suspension to the dead bird pit at weeks two, four and six. To my surprise, the strong dead bird pit odor began to dissipate each time as I sprayed. The odor was reduced dramatically. I am sure that the depth of disposed material was the only thing preventing further odor reduction. The pit height shrank approximately one to two feet the first week after I treated it and about 1/2 to one foot each following treatment. The feathers turned rapidly from white to brown and the fly levels dropped considerably. The farm staff remarked during the week following each treatment that they had noticed a dramatic reduction in dead pit bird odor and were now able to place new mortality in the pit without becoming nauseous from the smell. An interesting observation during the dead bird treatment was that the fly larvae covering the carcasses moved rapidly away from the Eco-Cure as it was applied to the pit. Adult flies were not affected by direct contact with the spray but maggots of a number of fly species moved away from every spot sprayed with Eco-Cure. The Eco-Cure exceeded all my expectations.

As an aside, I have been visiting another farm that has been using Eco-Cure for several months in their pits. In at least three houses they decided to try a similar product from another manufacturer. Although I had no idea which treatment was being used in each particular house, the Eco-Cure houses were obvious the moment that I entered the pits. They had no ammonia smell while the houses treated with the other material took my breath away. This farm has since announced that they are going back to Eco-Cure because it works so well and makes the farm personnel so much more agreeable when they are asked to perform duties in the manure pits.

Sincerely,

A handwritten signature in black ink, appearing to read "R. A. White, Jr.", with a large, stylized initial "R" and a long horizontal flourish extending to the right.

Robert A. White, Jr., Ph.D.
Entomologist, NIPCAM

6

[illegible]

Fig 2

Figure No. 2 Croton Facilities-Ammonia Controls

Brief Summary of Ammonia Control Requirements under
Attachment A of Consent Decree

Design

Submit Ammonia Plan to
EPA by March 15, 2004

Testing

Within 30 days of EPA
approval of Ammonia Plan,
commence bench scale test
of enzyme additive.

Within 15 days of
completion of bench scale
test, submit results to EPA.

If EPA determines ammonia
emissions

Reduced less than
50%

Submit revised
Ammonia Plan for
EPA approval

Reduced more than
50%

Commence use of enzyme
additives or other approved
controls within 60 days of EPA
approval in fully converted belt
battery layer barn at Croton
and commence 6 months
(including August 2004) of
continuous secondary method
(Silsoe) testing at Croton barn

Within 60 days of
completion of secondary
method test, submit results
to EPA.

Figure No. 2 Croton Facilities-Ammonia Controls

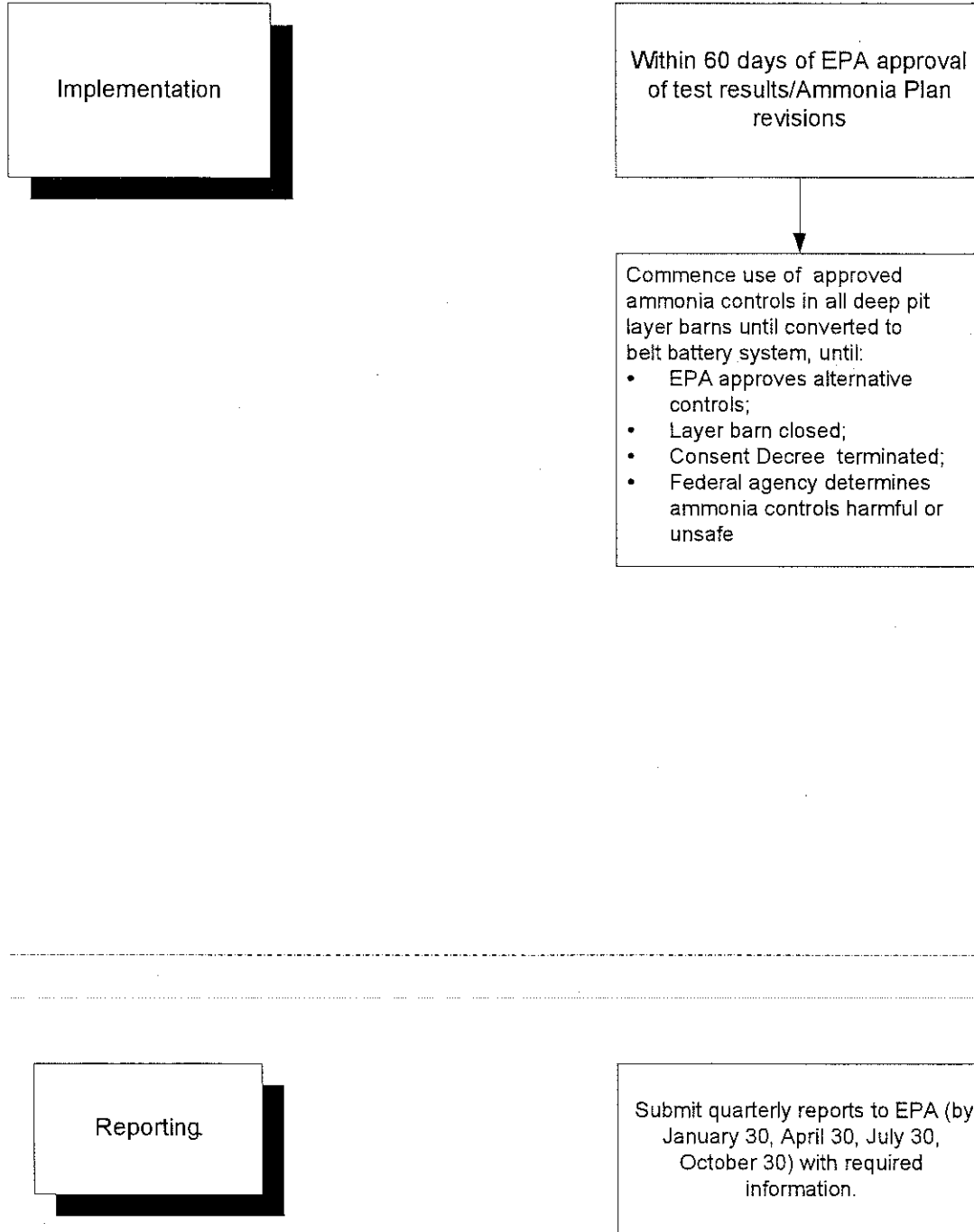


Figure No. 4 Northern Facilities-Ammonia Controls (Mt. Victory/Marseilles)

Brief Summary of Ammonia Control Requirements under
Attachment A of Consent Decree

Design

Submit Ammonia Plan to
EPA by March 15, 2004

Testing

Within 30 days of EPA
approval of Ammonia Plan,
commence bench scale test
of enzyme additives.

Within 15 days of
completion of bench scale
test, submit to EPA.

If EPA determines ammonia
emissions

Reduced less than
50%

Submit revised
Ammonia Plan for
EPA approval

Reduced more than
50%

Commence use of enzyme
additives or other approved
controls within 60 days of EPA
approval in 1 deep pit layer
barn, and commence 6
months (including August
2004) of continuous
secondary method (Silsoe)
testing at barns with use of
enzyme additives and without
use of enzyme additives.

Within 60 days of
completion of secondary
method test submit results
to EPA.

Figure No. 4 Northern Facilities-Ammonia Controls (Mt. Victory/Marseilles)

Implementation

Within 60 days of EPA approval
of test results/Ammonia Plan
revisions

Commence use of approved
ammonia controls in all deep pit
layer barns until:

- EPA approves alternative controls;
- Layer barn closed;
- Consent Decree terminated;
- Federal agency determines ammonia controls harmful or unsafe

Reporting

Submit quarterly reports to EPA (by
January 30, April 30, July 30,
October 30) with required
information.